

1677
CAMPANALOGIA:

OR THE

A R T
O F
R I N G I N G

Improved.

With plain and easie Rules to
guide the Practitioner in the
Ringing all kinds of *Changes*.

T O

Which is added, great variety of
NEW PEALS.

LONDON,

Printed by *W. Godbid*, for *W. S.* and are to
be sold by *Langley Curtis* in Goat-Court
on *Ludgate-hill*. 1677.

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◎ И Я

TO
THE HONOUR'D
AND TO
His much Esteemed FRIENDS,
The Members of the Society of
COLLEDG YOUTHS.

Gentlemen,

S your Society even
ab origine hath de-
servedly acquired an
eminency in many
respects above others
of this kind; so more especi-
ally

The Epistle

ally for the pregnancy of its
Members in the composing of
Peals. For when the Art of
Cross-pricking lay enveloped in
such obscurity, that it was
thought impossible that double
Changes on five bells could be
made to extehd farther than ten,
and triple and double Chan-
ges on six farther than sixty;
then it was that a worthy
and knowing Member of your
Society, to dissipate those mists
of Ignorance, and to usher in
the bright morn of Knowledg,
prickt those much applauded
Peals of *Grandfire* and *Grandfire Bob*, which for their excellency
have for many years together

con-

Dedicatory.

continually triumphant in practice
amidst all others whatsoever;
and which indeed have been a
great light in the production of
that great variety of new Peals
herein contained; the greatest
part of which being also the off-
spring of your Society, I there-
fore thought fit to usher them
into the world under the wings
of your Protection.

Gentlemen, as a member I held
my self obliged to add my Mite
to your full fraught Treasury of
Speculative and Practical Know-
ledg of this kind; though I con-
fess your acquisition on this ac-
count will be very mean, since
my want of ability sufficient to

The Epistle

undertake a thing of this nature, and also want of opportunity by converse with others to supply my own defects, have rendered the Book less acceptable than it might have been done by some more knowing head and acuter Pen. And although I am conscious that it meriteth not your acceptance ; yet I assume the confidence to believe that you will favour it with a kind entertainment amongst you ; and the rather, for that I know you are too judicious to sentence it without first casting into the ballance of your indifferent judgments some Grains of Allowance: The countenance you

Dedicatory.

you shew it will silence Detractors, and be Armour of proof against the fools bolts which may happen to be soon shot at the Author, who is

Gentlemen,

*A constant well-wisher to
the Prosperity (though an
unworthy member)
of your Society,*

F. S.

The Antagonist who is
wary of being seen to be
desiring the looks of a
governess and the humor of a
young woman is Will Herne's Deser-
ter.

ERRATA.

Courteous Reader,

Some few faults have escaped the Press: as pag. 27
line the 4th, for grateful read graceful. page 31.
line the 19th. for imitat^g read imitating, with some
vibes, which you are desired either candidly to amend, or
hastily to pass over.

2.1



OF THE
 A R T
 O F
 Changes.



These clear dayes of Knowledge, that have ransackt the dark corners of most Arts and Sciences, and freed their hidden mysteries from the bonds of obscurity, have also registered this of *Ringing*, in the Catalogue of their Improvements; as well the Speculative as the Practick part, which of late years remain'd in *Embryo*, are now become perfect, and worthy the know-

B ledge

ledge of the most ingenious. Although the Practick part of *Ringing* is chiefly the subject of this Discourse, yet first I will speak something of the Art of *Changes*, its Invention being Mathematical, and produceth incredible effects, as hereafter will appear. But first, I will premise a word or two, to shew what the nature of those *Changes* are. Some certain number of things are presupposed to be changed or varied; as 2. 3. 4. 5. 6. or any greater number whatsoever; then the number of things to be so varied must have the like number of fixed places assigned them. As if five men were sitting upon five stools in a row; the stools are supposed to be fixed places for the five men, but the men by consent may move or change to each others places at pleasure, yet still sitting in a row as at first: now this Art directs how, and in what order those five men may change places with each other, whereby they may sit sixscore times in a row, and not twice alike. And likewise a *Peal* of five Bells, being raised up to a fit compafs for ringing of *Changes*, are there supposed to have five fixed places, which time assigns to their notes or strokes; yet the notes of the Bells may change into each others places at pleasure: now this Art also directs the manner and method of changing

ing the five notes in such sort, that they may strike sixscore times round, and not twice alike.

The numbers of *Changes* are thus to be discovered. *Two* must first be admitted to be varied two wayes; then to find out the *Changes* in *three*, the *Changes* on two must be multiplied by three, and the product will be *six*, which are the compleat number of *Changes* on *three*.

Those six *Changes* being multiplied by four, will produce *24*, which are the compleat number of *Changes* on *four*. The *24* *Changes* on *four*, being multiplied by five, will produce *120*, which are the compleat number of *Changes* on *five*. And in like manner the *120*, being multiplied by six, will produce *720*, which are the compleat number on *six*. The *720*, being multiplied by seven, will produce *5040*, which are the number of *Changes* on *seven*. The *5040*, being multiplied by eight, will produce *40320*, which are the number of *Changes* on *eight*. Those *Changes* on *eight*, being multiplied by nine, will produce *362880*, which are the number of *Changes* on *nine*. Those *Changes* on *nine*, being multiplied by ten, will produce *3628800*, which are the number on *ten*. Those on *ten*, being multiplied

by eleven, will produce 39916800, which are the number on eleven. Those also being multiplied by twelve, will produce 479001600, which are the compleat number of Changes on twelve. And if twelve men should attempt to ring all those Changes on twelve Bells, they could not effect it in less than seventy five years, twelve Lunar Months, one week, and three days, notwithstanding they ring without intermission, and after the proportion of 720 Changes every hour. Or if one man should attempt to prick them down upon Paper, he could not effect it in less than the aforesaid space. And 1440 being prickt in a sheet, they would take up six hundred sixty five Reams of Paper, and upwards, reckoning five hundred Sheets to a Ream; which Paper at five shillings the Ream, would cost one hundred sixty six Pounds five Shillings.

The reason of the aforesaid Multiplication, by which the numbers of Changes are discovered, and also that those Products are the true numbers of Changes, will plainly and manifestly appear in these following Demonstrations.

But first, *two* must be admitted to be varied two ways, thus. ————— | 1 2

And then consequently, *three* will | 2 1
make

make three times as many Changes as *two* ; for there are three times two figures to be produced out of three , and not twice two the same figures, which are to be produced by casting away each of the three figures one after another. First, cast away 3 , and 1.2 will remain ; cast away 2 , and 1.3 will remain ; cast away 1 , and 2.3 will remain. So that here are three times two figures produced out of the three, and not twice two the same figures, as 12.13.23. each two may be varied two ways, as before : then to the changes which each two makes add the third figure which is wanting ; as to the two changes made by 1.2 add the 3 , to the changes on 1.3 add the 2 , and to the changes on 2.3 add the 1 , and the three figures will stand six times together, and not twice alike, as here appeareth.

Four will make four times as many changes as *three*. For there are four times three figures to be had out of four, and not twice three the same figures, which are to be produced by casting away each of the four figures by turns. First cast away 4 , and 123 will remain ; cast away 3 , and 124 will remain ; cast away 2 , and 134

123
213
132
312
231
321

1234
2134
1324
3124
2314
3214
1243
2143
1423
4123

will remain; and lastly, casting away 1, and 234 will remain; so that here is 123, 124, 134, 234, and not twice three the same figures. Now each three may be varied six ways, according to the preceding Example. Then to the six changes which each three makes, add the fourth figure which is wanting; as to the six changes on 123 add the 4, to the six changes on 124 add the 3, to the six changes on 134 add the 2, and to the six changes on 234 add the 1, which renders the changes compleat; for then the four figures stand twenty four times together, and not twice alike, as here appears.

Five will make fivetimes as many changes as four; for there are five times four figures to be had out of five, and not twice four the same figures, which are to be produced as before, by casting away each of the five figures by turns. Cast away 5, and 1234 will remain; cast away 4, and 1235 will remain; cast away 3, and 1245 will remain; cast away 2, and 1345 will remain; cast away 1, and 2345 will remain. So that here are five times four figures produced, and not twice four the same figures. Now each four maybe varied

twen-

twenty four ways, as in the preceding example; then to the twenty four changes which each four makes, add the fifth figure which is wanting: as to the twenty four changes on 1234, add the 5; to the twenty four changes on 1235, add the 4. to the changes on 1245, add 3. to the changes on 1345, add 2. and to the changes on 2345, add 1. which renders the changes compleat, for then the five figures stand sixscore times together, and not twice alike.

12345	12354	12453	13452	23451
21345	21354	21453	31452	32451
13245	13254	14253	14352	24351
31245	31254	41253	41352	42351
23145	23154	24153	34152	34251
32145	32154	42153	43152	43251
12435	12534	12543	13542	23541
21435	21534	21543	31542	32541
14235	15234	15243	15342	25341
41235	51234	51243	51342	52341
24135	25134	25143	35142	35241
42135	52134	52143	53142	53241
13425	13524	14523	14532	24531
31425	31524	41523	41532	42531
14325	15324	15423	15432	25431
41325	51324	51423	51432	52431
34125	35124	45123	45132	45231
43125	53124	54123	54132	54231
23415	23514	24513	34512	34521
32415	32514	42513	43512	43521
24315	25314	25413	35412	35421
42315	52314	52413	53412	53421
34215	35214	45213	45312	45321
43215	53214	54213	54312	54321

And in this manner the compleat numbers of changes on six, seven, eight, nine, ten, eleven, twelve, &c. may also be demonstrated.

The numbers of changes will also plainly appear by the methods, whereby they are commonly prickt and rung. Now the nature of these methods is such, that the changes on one number comprehends the changes on all lesser numbers, and that so regularly, that the compleat number of changes on each lesser number are made in a most exact method within the greater; insomuch that a compleat Peal of changes on one number seemeth to be formed by uniting of the compleat Peals on all lesser numbers into one entire body; which will manifestly appear in the 479001600 changes on twelve: for that Peal comprehends the 39916800 changes on eleven; these likewise comprehend the 3628800 changes on ten, these changes on ten comprehend the 362880 on nine, these on nine comprehend the 40320 on eight, these on eight comprehend the 5040 on seven, these likewise the 720 on six, the 720 also comprehend the 120 on five, the 120 comprehend the 24 changes on four, these also comprehend the six changes on three, and the six comprehend the two changes on two. Each of these Peals

Peals (viz.) on eleven, ten, nine, eight, seven, six, five, four, three, and two, being made in a most exact method within the changes on twelve. For Example, two are first admitted to be varied two ways, thus —

Now the figure 3 being hunted through each of those two changes, will produce the six changes on three. The term *Hunt*, is given to a Bell to express its motion in Ringing, which in figures is after this manner. It must lie behind, betwixt, and before the two figures: first behind them thus, 1 2 3; then betwixt them, thus, 1 3 2; now before them, thus, 3 1 2: this is called a *hunting* motion, and here it has hunted through the first change of the two, wherein it made three variations, as appears in the figures, standing thus in order. —

Now it must hunt through the other change, which is 2 1, in the same manner as before; that is, first it must lie before, then betwixt the two figures, then behind them, thus, 3 2 1, 2 3 1, 2 1 3. Here it has hunted through again, wherein it made three more variations; which three being set directly under the former, the six variations will then plainly appear, as in these figures: where the three figures stand six times together, and not twice alike.

Now.

123

132

312

321

231

213

Now the figure 4 being in like manner hunted through each of those six changes, will produce the 24 changes on four. First, therefore it must hunt through the first, which is 123, letter (a); then through the second change of the six, which is 132, letter (b); then through the third, which is 312, letter (c), and so it being hunted through the rest of the changes likewise, will produce the twenty four changes on four.

The figure 5 being hunted through each of those twenty four changes, will produce the 120 changes on five. First therefore it must hunt through the first, which is 1234, letter (a); then through the second, which is 1243, letter (b); then also through the third, which is 1423, letter (c). In which manner it being hunted through the rest of the twenty four changes, will produce the 120 on five. And then the figure 6 being hunted through each of those sixscore

(a) | 1234
1243
1423
4123

(b) | 4132
1432
1342
1324

(c) | 3124
3142
3412
4312

(a) | 12345
12354
12534
15234
51234

(b) | 51243
15243
12543
12453
12435

(c) | 14235
14253
14523
15423
51423

chan-

changes will produce the 720 changes on six. And the figure 7 being hunted through each of those 720 changes, will produce the 5040. In which manner also the eighth, ninth, tenth, eleventh, and twelfth, being successively hunted through each Peal in the aforesaid order, will at length produce the compleat number of changes on twelve. Wherein 'tis observable, that all the figures, except two, have a hunting motion; which two may properly be term'd the Center, about which the rest do circulate. By these methods it is evident, that every hunting figure hath a certain number of figures assigned, through which tis constantly to hunt: as in the aforesaid Example on twelve, where the 1.2 are assigned for the figure 3 to hunt through, as appears in the six changes before. And in like manner, 123 are assigned for the figure 4 to hunt through; 1234 are assigned for the figure 5 to hunt through; 12345 for 6 to hunt through, &c. Now the figure 3 hunts as many times through the 1.2. as those two make changes, that is, two times wherein it makes twice three changes, that is, six, as before appeareth. The figure 4 hunts as many times through the 123, as those three figures make changes, that is, six times; wherein it makes six times four changes, which

which amounts to twenty four. The figure 5 hunteth as many times through the 1234, as those four figures make changes, that is, twenty four times; wherein it makes twenty four times five changes, which amounts to 120. The figure 6 hunts as many times through the 12345, as those five make changes, that is 120 times, wherein it maketh 120 times six changes, which amounts to 720. And in like manner the figure 7 hunts 720 times through 123456, wherein it maketh 720 times seven changes, which amounts to 5040. The eighth hunteth 5040 times through 1234567, wherein it makes 40320 changes. The 9th hunteth 40320 times through 12345678, wherein it makes 362880 changes. The tenth hunteth 362880 times through 123456789, wherein it makes 3628800. The eleventh hunteth 3628800 times through 1.2.3.4.5.6.7.8.9.10. wherein it makes 39916800. And lastly, the twelfth hunteth 39916800 times through 1.2.3.4.5.6.7.8.9.10.11. wherein it makes 39916800 times twelve changes, which amounts to 479001600, being the compleat number on twelve. By which 'tis evident, that every hunting figure hunts as many times through its assigned number of figures, as those figures are capable of making changes, which in short

short comprehends the summe and substance of this method, which is universal from two, to all greater numbers whatsoever.

If we consider the multitude of different words, wherewith we express our selves in Speech, it may be thought almost impossible that such numbers should arise out of twenty four Letters; yet this Art of variation will produce much more incredible effects. To give an instance thereof, I will shew the numbers of every quantity of Letters from two to twelve, that may be produced out of the Alphabet. The generality of Words consisting of these quantities, (viz.) two letters, three letters, four, five, six, seven, eight, nine, ten, eleven, and twelve letters. There are 10626 times four letters to be produced out of the twenty four letters of the Alphabet, and not twice four all the same Letters. There are likewise 42504 times five letters, 134596 times six letters, 346104 times seven, 735471 times eight, 1307504 times nine, 1961256 times ten, 2496144 times eleven, and 2704156 times twelve. Now each quantity being varied by the rules of this Art, will produce incredible numbers. First the 10626 times four letters, being multiplied by 24, which are the number of ways to vary each four letters, will produce

duce 255024 that is to say, four letters may be produced out of the Alphabet to stand together after this manner (*a b c d*) two hundred fifty five thousand and twenty four times, and not twice alike. And in like manner, the 42504 times five Letters, being multiplied by 120, which are the number of ways to vary each five, will produce 5100480. The 134596 times six letters, being also multiplied by 720, will produce 96909120. The 346104, being multiplied by 5040, will produce 1564364160. The 735471, being multiplied by 40320, will produce 29554290720. The 1307504, being multiplied by 362880, will produce 474467051520. The 1961256, being multiplied by 3628800, will produce 7117005772800. The 2446144, being multiplied by 39916800, will produce 99728079819200. And lastly, the 2704156 time twelve letters, being multiplied by 479001600, will produce 1295295050649600, which products being all added together, as also 12696 which are the numbers consisting of two and three letters, the whole will amount to 1402645824276320, wherein there are not two alike, nor two letters of one sort in any one of them; which being written or printed on large Paper in folio, allowing

lowing 5000 to a sheet, they would take up 561058329 Reams of Paper and upwards, reckoning 500 sheets to a Ream: which Paper all the Houses in the City and Liberties of *London* would not contain; and in quantity doubtless infinitely exceeds all the Books that ever were printed in the world, reckoning only one of each Impression. And at the rate of five shillings the Ream, the Paper would cost 140564582 Pounds sterling; which is above four times as much as the yearly Rent of all the Lands and Houses in *England* amounts to. And all the people both young and old in the City and Suburbs of *London* (admitting they are five hundred thousand) could not speak the like numbers of words under forty years and upwards, each of them speaking 15000 every hour, and twelve hours every day. These prodigious numbers are the more to be admired, considering that the greatest number of letters in any of them, exceeds not twelve, neither are two letters of one sort in any one of them: but by producing and varying all the greater quantities, and placing two or more letters of one sort, or two of one sort and two of another, with all variety of the like nature that commonly happens in words, the numbers arising thereby would infinitely exceed

exceed the former. And if all the numbers of every quantity of letters from one to twenty-four, together with all the variety as aforesaid, were methodically drawn out and varied according to the rules of this Art; which might easily be performed in respect of the plain and practical method of doing it; but the infinite numbers of them would not permit a Million of men to effect it in some thousands of years: it would be evident, that there is no word or syllable in any language or speech in the world, which can be express with the character of our *Alphabet*; but might be found *literatim* and entire therein; and more by many thousands of Millions than can be pronounced, or that ever were yet made use of in any language.

I will here give one instance of another kind; shewing the admirable effects of this Art, and so conclude. A man having twenty Horses, contracts with a Brick-maker to give him one hundred pound Sterling; conditionally that the Brick-maker will deliver him as many Loads of Bricks; as there are several Teams of six Horses to be produced out of the aforesaid twenty to fetch them, and not one Team or Sett of six Horses to fetch two Loads. The Brick-maker might be thought to have made a very advantageous bargain,

bargain, but the contrary will appear. For there are thirty eight thousand seven hundred and sixty several Teams of six Horses, to be produced out of twenty, and not twice six the same Horses; then the Brick-maker must deliver as many Loads as there are Teams, and each Load consisting of five hundred Bricks, the whole would amount to 19380000, which being bought for one hundred pounds as aforesaid, would not cost above five Farthings a thousand; and at the rate of thirteen shillings and four pence the thousand, they amount to twelve thousand nine hundred and twenty pounds Sterling. But should a contract be made with the Brick-maker to deliver as many Loads of Bricks, as there are Teams of six Horses in each, to be produced out of the aforesaid twenty, which shall stand in the Cart in a differing manner; that is to say, although there may be the same Horses in several Teams, yet their places shall be so changed, that they shall not stand twice alike in any two Teams. On this account the Brick-maker must deliver seven hundred and twenty times as many as before; for there are 38760 several Teams as before I have shewed: then each Team may be placed 720 ways in the Cart, and not twice alike, which is to be done accor-

ding to the methods whereby the 720 changes on six Bells are rung. So that 38760, which are the number of Teams, multiplied by 720, which are the number of ways to vary the six Horses in each Team, the product will be 27907200, which are the compleat number of Teams; and every Team carrying one Load, consisting of five hundred Bricks, the Whole will amount to 13953600000 Bricks. And after the proportion of a hundred and fifty thousand of Bricks to a House, they would build ninety three thousand and twenty four Houses; which are above six times as many as the late dreadful fire in *London* consumed. And at the rate of thirteen shillings and four pence the thousand, they are worth 6976800 pounds Sterling, which is at least four hundred Waggon-loads of money, as much as five Horses can ordinarily draw.

AN



AN INTRODUCTION To the Practice of RINGING.

AS the original design of casting Peals of Bells was in order to make pleasant Musick thereon ; so the Notes in every Peal are formed apt for that end and purpose , every Peal of Bells being tun'd according to the principles of Musick ; for in a Peal of six Bells are the six plain Song-Notes, whereupon all Musick consists, namely, *la sol fa mi re ut*. But in regard that in ringing of them the Notes cannot be had at command, as the Notes of other Instruments may ; therefore, as the Practitioners in ancient time found some necessity to cause all the Notes to strike successively after one another, so likewise they thought fit in ringing them to place the Notes in this following order. The least note to lead or strike first, then the Note which is the next degree.

deeper or flatter, and so the rest of the notes to strike after each other according to their degrees, the flattest striking last; in which order the notes were successively reiterated both at fore-stroke and back-stroke, from the beginning to the end of each Peal. And at this day the same order is also observed in raising, ceasing, and ringnig them at a low compass; wherein each note being confin'd to strike in a certain place, therefore had they their terms of First, Second, Third, Fourth, Fifth, &c. given them, to denote their order and places of striking; from whence also the Bells derive those terms of distinction by which they are now known. Although the ringing of a Peal of Bells in the aforesaid order, (which is commonly term'd *Round-ringing*) is in it self Musical; yet the Notes may be so placed in ringing, that their Musick may be rendred much more pleasant: for in Musick there are Concords, which indeed may be term'd the very life and soul of it, that renders all Musick exceeding pleasant: the principal are Thirds, Fifths, and Eights; Thirds are 1 3. 2 4. and such like: Fifths are 1 5. 2 6. &c. Eights are 1 8. 2 9. 3 10. &c. each Concord consisting of two notes. They may well be termed Concords, in respect of their agreement and

and harmony ; for the two notes (as if it were by mutual consent) being struck together at one instant, or else immediately after one another , affords delightful melody to the ear ; in which respect, a peal of five Bells are capable of making better Musick than a peal of four ; six better than five ; and more especially will ten or twelve make more excellent Musick than any lesser numbers can possibly do, there being greater variety of Concords therein, and especially of Eights. For this Musical end were changes on Bells first practised, *changes* being nothing else but a moving and placing of the Notes in ringing, whereby variety of pleasant Musick is made ; and as the manner of moving the notes, is, for two notes to change places with each other, therefoare are they called *Changes*. The methods of changes being somewhat intricate, I have therefore penn'd the following Treatise as a Clue to guide the Practitioner through the Labyrinth of them, wherein I have made use of figures to represent the notes of Bells, the manner thus. In a peal of five Bells there are five several notes, which with figures are thus express, 1 2 3 4 5 : the figure 1 represents the least or sharpest note, which is term'd the First, because its place in round ringing is to lead ; this note is most

commonly called the *Treble*. The figure 2 represents the note which is the next degree deeper or flatter, and is term'd the *Second*, because it strikes in the second place. And in like manner 3 represents the note of the *third Bell*, 4 the note of the *fourth Bell*, and 5 the note of the *Fifth or Tennor*. In which manner, the figures in all the following methods do likewise represent the notes of Bells.

Since the ringing of changes requires the *peal* of Bells, on which the changes are to be rung, to be first raised up to a *set Pull*, which *compass* is most proper for the ringing of them; therefore the Learners first practice must be to raise a Bell true in *peal*, to ring it at a low *compass*, and also to cease it true in *peal*, wherein consists the chief grounds of this *Art*, which depends on the *Ear*, and therefore much judgment is required therein. And to speak the truth, most practitioners are in these days somewhat deficient herein; the ringing of changes having generally diverted the Learners fancy from the practice of *raising*, *round-ringing*, and *ceasing*, by which means we have in a manner lost one Excellency in the pursuit of another. Therefore I could wish that the Practitioners of this *Art* would set a greater esteem on true Ring-

Ringing in general, since the only excellency as well in the ringing of Changes as Rounds, depends thereon: the keeping of time being as essential to render all kinds of ringing pleasant to the ear, as 'tis to render any other kind of Musick; therefore the practitioner ought to have a Musical eare, and to have some judgment in beating time, without which he can never ring his Bell true in its place. A prospect of true ringing at any certain compass under the Sett, may thus be taken; for Instance, in ringing a peal of 5 Bells; from the fore-stroke of every note to the next fore-stroke of the same note, there ought to be eleven *punctums* or Beats of time, which are all supposed to stand at *Æquidistances*: now in ten of these *punctums*, the five notes ought exactly to strike at the fore-stroke and back-stroke, and the eleventh stands as a Cypher to guide the Treble-note at fore-stroke to a double proportion of time from the Tenor-note at back-stroke: which blank *punctum* must also be beaten in the same place by every note, to render its fore-stroke answerable to that of the Treble. For example; the third note having struck at fore-stroke, it must beat eleven *punctums* of equidistance unto its striking there again. The first *punctum* is that of the 4th note, the second 5, the

third 1, the fourth 2, the fifth 3, the sixth 4, the seventh 5, the eighth 0, the ninth 1, the tenth 2, the eleventh its own place of striking again at fore-stroke. These *punctums* or Beats of time, must be proportioned either wider or closer, according to the compass of the Treble: therefore first the Treble must fix its compass certain and true at fore-stroke, which ought to be proportionate to what the number of the notes, and compass of the peal of Bells, may according to judgment permit; and then from one fore-stroke of it to the next, if there are five notes; there ought to be eleven *punctums* of equidistance assigned, wherein the notes should exactly strike (except the blank) as before. From hence 'tis, that the most judicious Ringer ought to be put to the Treble; for that bell cannot possibly be rung true by any other means than by beating of its own time; and although the exactness of true ringing requires the like in every note, when once the compass is fixed, yet the leading note being rung true, may be a guide to the rest of the notes, which may tolerably take their measures of time from the Treble-note: but for every note to take its measure of time solely from the next preceding note, must needs be very erronious; for thereby

they

they implicitly lead one another out of the way. Or else in the ringiug of five bells, from the fore-stroke of every note to the next fore-stroke of the same note, there may be one and twenty *punctums* or beats of time asigned, to stand at equidistances; and the five notes, as they follow one another, at the fore-stroke and back-stroke to strike in every second *punctum*, except the Treble-note at fore-stroke, which must strike in the third *punctum* from the Tenor at back-stroke; so that then there will be two of those spaces betwixt every note, and three betwixt the note of the Tenor at back-stroke and the note of the Treble at fore-stroke, which possibly by some may be held a better compass than the former: but *quot homines tot sententiae*. Every Practitioner, that has judgment to beat his own time, has the advantage of ringing his bell true, whilst the rest of the notes commit faults: for the compass being once fixed, as many bells as do either rise or fall from thence commit errors.

The truest way of raising a peal of bells according to the best of modern practice, is, as quick as may be; every Ringer taking assistance to raise his bell, according as the going of it requires. In raising of them, the lesser bells, as the Treble &c. ought at the first pull

pull to be swayed very deep, and held down in the sway by strength of armes as much as may be, to delay the time of their first striking, by which means the bigger bells, which carry a large compafs, may have space to come in; and the raising of the smaller bells to be continued with a strong pull, giving them scope over head (for the aforesaid reason) untill they come up Frame-high, or thereabouts, and then the pull to be slacken'd, and the bells leisurely to be raised to the intended height or pitch. The bigger bells of the peal, as the Tenor &c. must in their first raising be checkt or pinch'd over head, by which means the notes of all the bells may be made to strike round in their due place and order from the beginning; and observe, that at the first pull all the bells must follow one another as close as may be. A peal of bells may thus be ceased: the falling of the bells from a Sett-pull must gradually be done, by checking them only at Sally, until the low compafs renders the Sally useleſs; and when they are ceased so low, that they scarce strike at back-stroke for want of compafs: then he that rings the Treble, may give notice (by stamping on the ground) that the next time the bells come to strike at the fore-stroke, they may be checkt down so low as to cease their

their striking at the back-stroke, yet their striking round at the fore-stroke may be continued, until they are brought into a chime, which is a grateful conclusion of a peal.

In raising of a peal of bells, all the notes ought to strike round at one pull: but mistake me not, I do not mean at the first pull; for at small bells 'tis usual to sway them all round at the first pull without striking; at the second pull to strike them at the fore-stroke, and at the third pull at back-stroke. In raising of a peal of more weighty bells, 'tis usual to strike them double at the fourth pull, because the extraordinary weight and large compass of the hind-bells permits it not to be done sooner. In the first raising of a peal of bells, one bell ought not to strike before the rest, or to miss striking when the rest go round: neither ought any bell in ceasing to strike after the rest, or to leave striking before the rest; all which, according to the strictness of true ringing, are accounted great faults.

The peal of bells on which the changes are to be rung, must first be raised up to a Sett-pull, which compass is most proper for the ringing of changes; for then the notes of the bells may be had at command. Therefore before the young Practitioner can be capable of ringing changes, he must be extraordinary well

well skill'd in the managing of a bell at a Sett-pull, which is absolutely requisite, for this reason: In the ringing of changes, his mind will be so busied and wholly taken up with the consideration of the course and method of them, and his eye continually wandering about to direct his pull in the following of the other bells; that unless he has extraordinary skill in the managing of his own bell, and can set it in a manner hood-winkt, he will be apt either to drop or overturn it; or else on the other hand, for want of skill, his eye and mind will be so fixed on his own rope and bell to guide the managing of it, that he cannot at the same time mind the course of the changes, and then no wonder if he is in a wood, which consequently follows; and indeed hence partly 'tis, that the Learners in their first practice do oftentimes toil and moil themselves to so little purpose. Therefore 'tis not enough that the young Practitioner can set a bell it may be half a score times together, when 'tis an even wager that he either drops or overturns it in those ten pulls: but he must be so perfectly skill'd, as that he might adventure to lay ten to one, that he can set it thirty or forty times together, both fore-stroke and back-stroke, without dropping or overturning it, and without looking

looking directly either on his hands or rope whilst he sets it. Therefore in his practice of setting a bell, he may cast his eye about on the other bell-ropes whilst he manageth his bell, whereby he may accustom himself to manage it as the ringing of changes requires.

The ringing of changes is performed, partly by the ear, and partly by the eye; the ear informs when to make a change, the eye directs the pull in the making of it; but then again the ear guides the striking of the note true in its place according to time. So that the ear and eye have each of them its proper object in the ringing of changes, and therefore ought at the same time to be absolutely free from all others whatsoever, the notes of the bells being the object of the ear, and the bell-ropes the object of the eye. Now these two Senses in the time of ringing do each of them thus perform its office. First, the ear, as a Sentinel, discovers the near approaching change, and also the place wherein his note lies, that is, whether before or behind the note wherewith 'tis to make a change, and gives present information to the eye, to perform its part accordingly in the making of it; but then again the eye refers it to the ear, to place the note true in striking. But unquestionless (by the bie) the truest ringing of chan-

changes is to be performed only by the ear; but then the Practitioners must be capable to judg of time, and to beat it true, which must be the only direction to guide their pull; and then it must be performed at a peal of bells that may be managed with ease: and being so fitted in all respects, the changes may doubtless be rung more true, with greater pleasure to the Practitioners, and much more free from mistakes and forgets, only by the ear, than by making use of the eye to direct their pull. But in regard that either the ill going of the bells, or want of fit accomplishments in the practitioners, may render it unfit for common practice; therefore the surest way is to ring both by the eye and ear, as I said before. Now to render the eye and ear rightly useful in the ringing of changes, five things ought by the young Practitioner to be well understood. First, he must be able to distinguish the notes of a peal of bells, and to know one from another in the time of ringing. Secondly, he must apprehend the places of the notes. Thirdly, the precedency of notes. Fourthly, the manner of making a change in ringing. Fifthly, a general prospect of the manner of putting the four preceding notions into practice.

Observation 1. The Learner must be able
to

to distinguish the notes of a peal of bells one from another, and to know them asunder; as the Treble-note from the Second, the Second from the Third, &c. which, tis ~~true~~, may readily be done in round ringing, because each note may be known by the place wherein it constantly strikes; but in ringing of changes it is more difficult. For admitting that six bells should strike in this order, 5.3.6.1.4.2. it might puzzle an unskilful ear to judg which is the Treble, or which the Second note, especially whilst any other note strikes betwixt them: and the like difficulty might happen in dinguishing the rest of the notes, as the 2^d from the 3^d, &c. To remove this difficulty, he must endeavour to acquire some skill in tuning the notes of a peal of bells with his voice, which he may do by imitatieg the notes of the bells when he hears them ring: or else any person that has skill in singing, will presently direct him therein, and also how to take the true pitch of any notes with his voice, which will be the only means to distinguish them asunder.

Observ. 2^d. The Learner must rightly apprehend the places of the notes, which I think cannot better be done than by this means. Considering that the notes of a peal of bells do all strike one after another at the fore-stroke;

stroke, and the like at back-stroke ; it might be requisite for him to imagine, that the notes in their striking do lie in a direct line, that is, in a row at the fore-stroke, and the like again at back-stroke ; for then the places of the notes will much resemble the places of the figures wherewith the changes are prickt : for as the figures of every change do all stand in a row ; so likewise the notes of the bells, being imagined to strike in the like row, he may the more readily apprehend the places of the notes, and consequently of changing them. For the practick part of this Art, is performed by means of imaginary, not real notions ; which will thus manifestly appear. This is the platform of a Frame, wherein five bells may be supposed to hang in a Steeple, the figures therein representing the places wherein the five bells hang. Now in the sixscore changes on five bells, we will suppose the Treble to be the whole Hunt, and to hunt up first over the Second, then over the Third, &c. Now the Treble cannot really move out of the place wherein it hangs ; but by delaying its striking untill the Second Bell has struck, it may by that means strike next after it ; and again, by delaying its striking untill the Third has struck,

1	2	
3	4	5

struck; it may also strike next after that, this being the true manner of the changes; by which 'tis evident, that the bells have neither really such places nor motion as is pretended, but is meerly imaginary, and was at first feigned only as a Guide to direct the Practitioner's apprehension in the ringing of them. So that although the art of changes is in it self a real thing, yet the notions by which they are reduced to practice on bells, are not so. For which reason, the several practitioners of this Art, before they can become expert, are fain to form in their minds imaginary notions to guide them; some after one manner, some perhaps after another, according to their several fancies; yet all tending to render the methods of changes practicable on bells; and having once form'd in their minds such imaginary helps, they become expert in short time: and then no sooner do they understand the methods of changes prickt with figures, which they commonly discover at first view; but they are presently capable of ringing them readily on bells, which experience daily testifies. And hence it is, that oftentimes the Learners, although they perfectly understand the methods of changes prickt, and also can perfectly manage a Bell; yet for want of a right ap-

prehension of the nature of changing the notes, which of themselves it may be they cannot soon attain, are therefore much puzzled in their first practice of ringing changes. Therefore as a guide, the Learner must first form in his mind a fit representation of the places of the notes; which I think cannot better be done, than by imagining each note to be a figure; as the Treble-note to be the figure 1, the second note the figure 2, the third note the figure 3, and the like of the rest. Then whensoever he hears a peal of bells ring, let him by strength of imagination conceit, that each note bears the shape of a figure; that is, at the same instant of time that the note strikes, he may imagine that it leaves the impression of the figure behind it, and that with the eye of his imagination he perfectly sees it: and likewise as the notes of the bells do all strike after one another at the fore-stroke, so he may imagine that they lie in a row in the shape of figures; and the like again at back-stroke. For instance: suppose that five Muskets were charged with five bullets, and that each bullet bears the shape of a figure; one Gun to be charged with the figure 1, another with the figure 2, and the other three Guns with these three figures, 3. 4. 5. Then supposing a straight line

line were drawn upon the wall, thus — — — and that the five Muskets were by five men levell'd against the line, which is to be the mark for them to shoot at ; the figure 1 to be first shot off, then the figure 2, and so the rest in order immediately after one another : now at the same instant of time that the Guns are heard to go off, the five figures would appear in a



row upon the wall, thus. So in like manner when he hears a peal of five bells strike after one another at the fore-stroke, and again at back-stroke, he may imagine that at the very instant of their striking their notes appear to his apprehension in the shape of the five figures, and that they strike in a row, thus, 1 2 3 4 5, as if each Bell were a Gun, and had shot out its note in the shape of a figure. There being necessity that the young Practitioner must either imagine each note to be a real figure, or else a representative : for as the ear is to be his guide to direct when to make each change ; so a right apprehension of the motion and places of the notes, must be a means to guide his ear. Now in regard that the changes are first prickt with figures, from whence the notes of the bells derive

their course; therefore if in ringing he imagine each note to be a real figure, then the same knowledge that guides the pricking, guides also as readily the ringing of them, for then the note of his bell is supposed to have the same course with that of a real figure. But if he imagines that each note is not a real, but a representative of a figure; then consequently it must only have the like, and not the same course: by which means, whilst he is ringing of changes, his mind must have frequent recourse to his Pocket, that is, to the changes there prickt; from whence he must continually fetch instructions to direct the course of his Bell, which is often-times the case of the Learner: his thoughts in the time of ringing being commonly upon the figures that are prickt, either upon paper, or else upon the Steeple-wall, whilst it should be wholly intent upon the notes. Therefore in a word, the Practitioner whilst he is ringing of changes, must fix his mind fully and wholly upon the notes of the bells, and not permit it in the least to wander from thence; for the notes are to be the sole object of the thoughts in the time of ringing.

The notes being imagined to strike in a row as aforesaid, their places will then soon be understood. The notes do take their places

places according to their successive order of striking both at fore-stroke and back-stroke ; each succeeding note taking its place next to that which precedes it : for whatsoever bell leads either at fore-stroke or at back-stroke, its note lieth in the first place of the supposed row of notes ; and that which strikes next after the leading note, its note lieth in the second place of the supposed row of notes, and so the rest in the like order. As if five bells should strike thus after one another either of fore-stroke or back-stroke, 5 4 1 2 3. here the 5th lieth in the first place, because it was first struck ; the 4th in the second place, because it was second struck ; the Treble in the third place, because it was third struck ; the 2^d in the fourth place, because it was fourth struck ; and the 3^d in the last place, because it was last struck ; and the like of the notes in every change.

Observ. 3. The next thing to be understood by the Learner, is the precedence of the notes. Now whereas in the ringing of changes, the notes do all strike after one another at the fore-stroke, and again at the back-stroke, therefore are they said to lie before or behind each other, according to their places of striking. As if five men were standing in a row, as these five figures represent,

1 2 3 4 5, the first man to stand at the fig. 1, the second man at the figure 2, &c. and that they stand with their faces all one way, that is, the first man ready to lead, and the rest to follow him one behind another. Now the first man stands before the rest, and the fifth man behind the rest; the second man stands behind the first man, but before the third; the third man stands behind the second, but before the fourth; and the fourth stands behind the third, but before the fifth. In which manner the notes being supposed to strike in the like row, may also be said to lie before or behind each other as the men did. For whatsoever note leads either at fore-stroke or back-stroke, is said to lie before the rest; and that which strikes last, to strike behind the rest. The note which lieth in the second place, as on the one hand it lieth behind the leading note, so on the other hand it lieth before the note in the third place. As the note in the third place lieth behind the note in the second place, so it lieth before the note in the fourth place. And in like manner, every note is said to lie behind those that strike before it, and before those that strike after it.

Obseru. 4. A Change is to be made betwixt two notes, by moving them into each others

others places ; wherein 'tis to be observed as a general Rule, That every change must be made betwixt two notes that strike next to each other. As if five bells were ringing round in this order, 12345, the 1 and 2 may make a change, or 2 and 3, or likewise 3 and 4, or 4 and 5, because each two lie next each other ; but the 1 and 3 cannot, because 2 strikes between them, much less may 1 and 4, &c. The two notes which make every change, moves into each others places in the making of it ; wherein one note is said to move *up*, and the other *down*.¹³⁵ The reason why one of them is said to move up, is, because he that rings that bell, in the making of the change must hold it up at the Sett a little longer than ordinary, to delay its striking , whereby 'tis made to follow the other note which before it preceded ; and because 'tis so held up, therefore 'tis said to make an *Up-change*, or to move up : and on the contrary, the reason why the other note is said to move down, is, because he that rings it, pulls down the bell a little sooner than ordinary, to make it strike before the note which before it followed ; and because 'tis so pulled down, therefore it is said to make a *Down-change*, or to move down. I will here give a short though certain rule to know when an

Up-change or a Down-change is to be made: whensoever any note moves to strike behind the note wherewith it makes a change, it makes an up-change in doing it; and whensoever it moves to strike before the note, which 'tis to make a change with, it makes a down-change in doing it: so that every note which moves forward the leading-note, makes an up-change; and when it moves toward the leading-note, it makes a down-change. I will here shew the manner of making a change: admitting that a peal of five bells were raised to a sett-pull, which is the usual compass for ringing of changes; the notes are first supposed to strike in this order, 12345. Now a change may be made betwixt any two notes that strike next each other; I will here make it betwixt the 3d. and 4th. which is to be done by moving them into each others' places. Now 'tis observable, that before the making of the change, the 3d. note lies before the 4th. that is, it strikes next before the 4th; and the 4th. lies behind the 3d. that is, it strikes behind it: now in the making of the change, the 3d. must move to strike behind the 4th: wherein it makes an up-change; and the 4th. note at the same time must move to strike before the 3d. wherein it makes a down-change;

the

the change being made, the bells will strike thus, 12435. All changes whatsoever are made in the aforesaid manner: for as the 3d note made an up-change in moving to strike behind the 4th, and the 4th at the same time a down-change in moving to strike before the 3d; so in like manner the two notes that make every change, must in the making of it move the one up, and the other down, as the 3d and 4th here has done. The Learner may take notice, that in ringing termes 'tis not usual to say, that a bell makes an up-change, or a down-change; but in short, that it *moves up or down*, which implies the former. When a note makes an up-change, 'tis then said to move *over* the other note; and when it makes a down-change, to move *under* it: as in the next preceding example, where the 3d note is said to move up over the 4th, and the 4th down under the 3d, in which manner the terms *over* and *under* are given to the two notes that make every change.

Observ. 5. In the time of ringing changes, two things are by the Practitioners to be well considered. First, to observe and readily to know, which two bells are always to make the next succeeding change: Secondly, if he is concern'd therein, to consider what bell he is to follow in the making of it.

Upon

Upon a right knowledge of these two things, depends the Practick part of this Art. To make him expert herein, he must before hand perfectly understand, and readily remember the course and method of the changes prickt with figures, wherein he ought to be so well skill'd, as to be able to prick them down divers ways, that is, to make any figure a Hunt at pleasure; which when he can readily and speedily do, without pausing to consider of the course, then 'tis presumed that he understands the methods throughly. But yet he will not be capable to put them in practice, untill he understands the manner of making a change in ringing; neither can he understand that, until he understands the precedency of the notes; nor the precedency, until he understands the places; nor the places, until he knows the notes one from another. Therefore the four preceding observations being first perfectly understood, and also the methods of the changes as before; the Practitioner may then successfully proceed in the ringing of changes; and as a further help therein I will here instruct him. There are three bells concern'd in the making of every single change, except only when 'tis made behind, and then but two: whensoever the note of his bell is to make a change with ^{noyly} any

any other note, his ear must then inform him whether it lies before or behind the other note; if it lies before, then in making the change it must move up behind it, that is, to follow it; and consequently, he must draw down his bell next after that which he makes a change with, which is called an up-change, as I said before. But if the note of his bell lies behind the other, then in making of the change it must move down to strike before it, and consequently he must draw down his bell next after that which the other before followed, this being a down-change. So that the making of an up-change is very easie, because he must always follow that bell which he makes a change with; but a down-change is more difficult, because he cannot so readily apprehend what bell he is to follow; yet there is a certain rule for it, which is this: to observe beforehand what note strikes the next but one before his, which bell he must follow in the making of the change. Whencesoever the two notes, which strike next before his note, are to make a change; he must consider, that notwithstanding his note is to lie still in its place, yet he is concern'd therein, because the bell which he followed before the making of the change, must in the making of it move away down, and therefore he must

must follow the bell that comes into its place.

The changes are to be rung, either by *walking* them, as the term is; or else Whole-pulls, or Half-pulls. By *walking* them, is meant, that the bells go round four, six, eight times or more in one change; which way is very proper for young Practitioners, to introduce them into a more ready way of Practice; for whilst the bells go round divers times in one change, they have in the mean time leisure to consider which two bells are to make the next following change, and also what bell each of them is to follow in the making of it; and so by diligence in practice they will by degrees acquire a more ready skill to enable them to ring at whole-pulls. Whole-pulls, is, when the bells go round at the fore-stroke and back-stroke in a change; and every time they are pull'd down at Sally, a new change is made. Whole-pulls was the general practice in former times; and indeed, considering the manner of the hanging of the bells in those days, they could not well be rung at half-pulls: but since the improvement of the Art of Bell-hanging, that is, with round Wheels, trussing them up in the Stock, and placing the Roll at right Angles with the Sole of the Wheel; the bells go much better, and are managed with more ease at a

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Sett-pull than formerly: therefore the changes are now generally rung at half-pulls, that is, at the fore-stroke one change, at the back-stroke another, and so throughout.

In ringing half-pulls, some peals of changes will cut compass, wherein the whole Hunt comes always to lead at the back-stroke; to prevent which, make the first change of the peal at the back-stroke. In plain and single changes on six bells, to hunt (that is, whole Hunt) the Treble, third, or fifth, down at the beginning of a peal cuts compass, unless prevented as before. Also to hunt the second, fourth, or sixth up at the beginning of a peal, cuts compass, unless prevented as before. Which rules, leaving out the Tenor, serves in like manner to prevent cutting compass on five bells.

'Tis convenient in ringing, to give notice of the extream changes, and he that rings the slowest Hunt, may best do it. The manner of it is, to say *Extream*, when the leading bell is pulling down, in order to make the change next before the extream; by which means there will be one compleat change betwixt the warning and the extream: longer warning would be too much, and shorter too little.

THE

THE divers kinds of changes on Bells may be comprehended under two heads, *viz.* Plain Changes, and Cross Peals, which terms are comparatively given: for as the first are plain and easie only in comparison to the methods of the second; so consequently the second croſs and intricate in comparison to the methods of the first. I will first shew in what respect they differ, and then proceed to the methods. Plain changes (I mean compleat peals) are ſuch as have one univerſal method, wherein all the notes except three have a direct hunting course, moving gradually under each other in one plain and uniform order. But the methods of croſs peals are various, each peal having a course differing from all others: and al-though most of them haue Hunts, yet the Hunts have different kinds of motions, and ſome very intricate. Moreover plain changes are alſo term'd Single changes, because in the ringing of them there is only a ſingle change made in the ſtriking of all the notes once round either at fore-stroke or back-ſtroke; whereas in croſs changes 'tis uſual to make as many changes as the number of notes will permit. For example, ſuppoſing that a peal of 5 bells were raifed, and rung at a Sett-pull; the notes are ſuppoſed to ſtrike round in

in this order, 12345: now any two of the notes that strike next together may make a change, therefore either a single or a double change may be made at pleasure. The single change is made by changing only two notes; the double change is made by changing four notes, that is, two to make one change and two another, yet 'tis called one double change, and not two changes, in regard 'tis made in the striking of the five notes of the bells once round: as, admit the treble, second, third, and fourth, should make a change, 'tis thus to be done, 21435, where the Treble and Second made one change, and 3, 4 another; which we will imagine so be made at the fore-stroke of the bells, and therefore 'tis called one double change, and not two changes, because 'tis entirely made in the striking of the five notes once round. So that this one double change has effected that which would have required two single changes to have done the like. For instance, there can but two notes change their places at once in a single change, therefore the Treble and Second shall first change their places thus, 21345; then the third and fourth thus, 21435: so that here the five notes have gone twice round to effect that, which in the double change was done in going once round.

And

And this is the nature of the difference between Plain and Cross changes.

As the Learner ought to proceed regularly in his practice, beginning first with the plainest and easiest methods. I will therefore observe that order, and first shew the course and methods of Plain changes.

The Changes on two Bells.

Two bells are capable to make only two changes, which is to be done by changing the notes twice, as in these figures.

1 2
—
2 1
1 2

The Changes on three Bells.

There are six changes on three bells; which are made by this rule: the two first and two last notes must be changed by turns.

First the two first notes, which are 1 2 thus.

1 2 3
2 1 3

The two last, which are 1 3, thus.

2 3 1

The two first

3 2 1

The two last

3 1 2

The two first

1 3 2

The two last

1 2 3

In these six changes 'tis observable, that the two first notes, which were 1 2, made the first change of the six; but they may as well be rung by beginning with the

two

two last notes, which are 2, 3 thus—	123
Next the two first notes, which are 1 3, thus, ——————	132
The two last ——————	312
The two first ——————	321
The two last ——————	231
The two first ——————	213
The six changes can be rung no more than these two ways here set down.	123

The Six changes are sometimes rung by observing a hunt therein, which is very improper, since every note has a like course. Yet I confess in demonstrating the methods on twelve, I did there admit a Hunt into the six changes; but that was only for demonstration sake.

The compleat peals of plain changes, from three to all greater numbers whatsoever, as the Twenty four changes on four, the Sixscore on five, the Seyer hundred and twenty on six, &c. are prickt and rung by one method; all the notes having a hunting-motion, except only three in each peal, which three do make the six changes in the same manner as they are before prickt. So that the Six changes on three may be term'd the *basis* or foundation of the compleat peals on all greater numbers. Every Hunting note in each peal has a

certain number of notes assigned, through which 'tis always to hunt. The term *hunt* is given to a note in respect of the manner of its motion, which I will shew in this example. First, the notes of four bells are supposed to strike round in this order, 1234. The Treble shall be the Hunt, and the other three assigned or appointed for it to hunt through. Now whereas the Treble-note leads, it must move through its assigned number to strike behind them: and whereas every change must be made betwixt two notes that strike next each other, as I have shewed before in the 4th *Observation*; therefore the hunting-note is confin'd to move gradually through the rest by making a change with each note that strikes next to it; and accordingly it must first move into the 2d place, next into the 3d place, and lastly into the 4th. So that 'tis to make a change with every note that lies behind it; first with the 2d note, next with the 3d, and lastly with the 4th. | 1234

The first change is thus ————— | 2134

The second thus ————— | 2314

The third thus ————— | 2341

The hunting note has here moved through its assigned number; for whereas at first it did lead, now it strikes behind them. Wherein 'tis observable, that it made up changes

changes all the way; which of necessity it must do, because every note with which it was to make a change, lay behind it: and because it made up changes, therefore tis said to have hunted up. The hunting-note shall now move through its assigned number again, to lead as at first. Therefore first it must move into the 3d place, then into the second place, and lastly into the first place, which is called the Treble's place; in which motion it must make a change with each note that strikes next before it; first with the 4th note, next with the 3d, then with the 2d.

The first change thus ————— | 2314

The second thus ————— | 2134

The third thus ————— | 1234

'Tis observable, that here the Treble made down-changes all the way, which of necessity it must do, because every note with which it was to make a change, lay before it; and because it made down-changes, therefore it is said to have hunted down. This is the manner of the motion of the hunting notes in all peals of plain changes; for they hunt up and down through their assigned number, as the 1 here has done. This example is plain and full to instruct the Learner in the hunting of any bell, therefore he ought to peruse it diligently, that he may understand the true

scope and meaning of it ; and as a help he may apply himself to practice by taking a Treble, and attempt to hunt it up and down as this Example directs ; which he may the more readily do, if he understand the 5th Observation before set down, which guides him to make a change in ringing. So that partly by reading and well considering of what I have here wrote, and partly by practice, he may in a short time become perfect in the hunting motion of any note ; which when he rightly apprehends, he will then presently be capable of understanding the following methods ; and therefore I shall be the more brief in my directions to them.

The Changes on four Bells.

Twenty four changes may be rung upon four bells : but the Learner may first practice the twelve changes, and the eighteen changes. In the twelve changes the notes are all to be hunted up after one another, which may be called the Twelve all over. First the treble-note must be hunted up, letter (a) ; then the second note must likewise hunt up, letter (b) ; next the

1234

2134

a { 2314

2341

b { 3241

3421

c { 4312

4132

4123

third

third note must hunt up, letter (c); and lastly the 4th note also, (d) | 1423
 letter (d). | 1243
 | 1234

The four notes may also hunt down one after another. First, the 4th note must hunt down to lead: then the 3d note likewise, and so the 2d and Treble one after another, which may be term'd the Twelve all under.

Courteous Reader, in my directions to the course of each peal, I do there refer by letters to the examples; which I am forced to do, to prevent those confused breaks, and unhandsome spaces, which otherwise would have happen'd both in examples and precepts. Whatever letter I mention in my directions, refers to the like at the figures. For instance; in my directions to the twelve changes next before, I there directed the treble-note to be first hunted up, letter (a); which letter refers to the like letter at the first three changes of the twelve, where the Treble hunted up, as 'tis here again presented, and the like of the rest. | 2134
 | 2314
 | 2341

In the Eighteen changes, the Treble is a
 E 3 hun-

hunting note, but never hunts up farther than the 3d place ; and when it lies there , the two first notes must make a change ; and every time it leads, the two hindmost notes. First it hunts up into the 3d place, letter (a) ; the two first notes, which are 2. 3, make a change, letter (b) ; the Treble hunts down (c). The two hindmost notes make a change (d), the Treble hunts up (e). The two first notes, which are 3.4, make a change (f) ; the Treble hunts down (g) ; the two last notes, which are 3.2, make a change (h), which method being continued, will bring the bells round at the end of eighteen changes. The Eighteen changes may also be rung by hunting the 4th note down into the 2d place , and then a change to be made behind : the 4th note to be hunted up again into its own place, and then a change to be made before , which course being continued , will produce Eighteen changes.

The Six changes on three are the ground of the Twenty four changes on four ; for one of the four notes hath a constant hunting motion

	1234
a	2314
b	3214
c	3121
d	1324
e	1342
f	3142
g	3412
h	4312
i	4132
k	1432
l	1423
m	4123
	4213
	2413
	2143
	1243
	1234

tion through the other three, in the same manner as in the preceding Example, pag. 50, and the three notes are to make the six changes in the same manner as I have before shewed in the changes on three bells; one of the six changes being always made every time the hunt lies either before or behind the three bells: therefore if the Learner do but rightly apprehend the course of the six changes, and also the manner of the motion of the hunting note, he will presently understand the method of the twenty four changes. The six changes in the twenty four, according to the terms of ringing are called Extream changes, and the three bells which makes them, Extream bells. So that in the twenty four changes, there is a hunt and three extream bells. Every time the hunt lies either before or behind the extream bells, an extream change must then be made. The extream changes may be made two ways, viz. either betwixt the two farthest extream bells from the hunt, or else betwixt the two nearest extream bells to it. In this Example every extream change shall be made betwixt the two farthest extream bells from the hunt, and the treble shall be the hunting note, which must first

hunt up (a); then the two farthest notes from the hunt, which are 2.3, must make an extream change (b). The Treble must hunt down (c). The two farthest notes from the hunt, which are 2.4, must make an extream change (d). The treble must hunt up (e); the two farthest notes from the hunt, which are 3.4, must make an extream change (f). The treble-note must hunt down (g). The two farthest extream bells from the hunt, which are 3.2, must make an extream change (h). The treble must hunt up (i). The two farthest notes from the hunt, which are 4.2, must make an extream change (k). The treble must hunt down (l). The two farthest extream bells, which are 4.3, must make an extream change (m), which concludes the peal. Now the Learner for his satisfaction may take out the extream changes in the same order as they were made, as first at (b), then (d), and so (f. b. k. m.) and they will stand as they are here set down; 3241 where 'tis evident, that 2.3.4 have 1342 made the six changes according to 4321 the method of the first six changes 1423 on three bells, before set down, 2431

(pag. 1234)

(pag. 48.) where the first change of that six was 213, and this being 324, is the same in course though the figures differ, and the rest of the changes in this six, are likewise the same in course and method with those.

In the preceding twenty four changes, every extream change was made betwixt the two furthest extream bells from the hunt. I will therefore here set down an example, where they shall be made between the two nearest bells to it. First, the treble hunts up (a). The two next notes to the hunt, which are 3.4, must make an extream change (b). The Treble must hunt down (c). The two nearest notes to the hunt, which are 2.4, must make an extream change (d). The Treble hunts up (e). The two nearest extream bells to the hunt, which are 2.3, must make an extream change (f). The Treble hunts down (g). The two next extream bells to the hunt, which are 4.3, must make a change (h). And the like extream changes being made as at (k) and (m), concludes the peal.

	1234
a	2134
b	2314
c	2341
b	2431
c	2413
d	1243
e	1423
f	4123
g	4213
f	4231
h	4312
g	4132
b	1432
i	1342
j	3142
k	3412
l	3421
m	3241

The six extream changes, viz.

(b.)

(b. d. f. b. k. and m.) being set down by themselves, will stand in this order, as here you see; where 'tis plain, that 2 3 4 have made the six changes, according to the method of the last six changes on three bells, pag. 49. where the first change of that six is made between the last two notes thus, 1 3 2. So in like manner is the first here thus, 2 4 3, which is the same method with that, though not the same figures.

3214
3124
1324
1234
2431
1423
4321
1342
3241
1234

So that the making of the extream changes two ways in the twenty four, proceeds from the two ways of making the six changes on three bells. This last way of making the extream changes, may, for distinction from the other way, be called *mediums*; which term is very proper, in regard that the two middlemost of the four notes do always make the extream change. The extream changes in one peal must all be made alike, that is, either betwixt the two farthest notes from the hunt, or else betwixt the two nearest notes to it; but the most usual way is to make them between the two farthest.

Any note may be made a hunt at pleasure, and its first motion at the beginning of the peal may be either up or down. The twenty four

four changes may be rung sixteen ways according to the aforesaid method, yet the changes in each are still one and the same; but by making each note a hunt, and moving it either up or down at the beginning, and also by making the extream changes two ways, the course of the changes will be so altered, that the same changes shall not come all along together in any two of those sixteen ways. With the hunting of one note it may be rung four ways; for the note may move either up or down at the beginning of the peal; then in its motion either way the extream changes may be made two ways, as before: so that to make each note a hunt, and with each hunt to ring it four ways makes sixteen in the whole. Wherein 'tis observable, that the treble-note cannot be moved down at first, nor the 4th up; therefore an extream change must first be made,

2d down.	3d. up	4. up.
1234	1234	1234
3134	1243	2134
2143	2143	2143
1243	2134	2413
1423	2314	4213
1432	3214	4423
4132	3241	2431
4123	2341	2341
4213	2431	2314
2413	2413	3214
2431	4213	3241
4231	4231	3421
4321	4321	4321
4312	3421	4312
3412	3412	3412
3421	4312	3142
3241	4132	3124
2341	4123	1324
2314	1423	1342
3214	1432	1432
3124	1342	4132
3142	3142	4123
1342	3124	1433
1324	1324	1243
1234	1234	1234

made, which is as effectual as if either note had moved at first. I have here prickt the twenty four changes three ways, wherein the extream changes are all made betwixt the two farthest notes from the hunt.

The Changes on five Bells.

There are sixscore changes to be rung on five bells; but the Learner may first practise some shorter peals, as the Ten changes, the twelve, the Fourteen, the Twenty all over, the Twenty with one hunt, and the Forty eight.

In the Ten changes the treble must first hunt up (a); the 2.3 must make a change (b). The treble must hunt down again (c); the 3.2 must make another change (d). The ten changes may also be rung by hunting down the 5 to lead; then 3.4 to make a change; the 5 to be hunted up again, and the 4. 3 to make another change.

In the Twelve changes the treble hunts up into the third place, then the two first notes make a change; the treble hunts down again, then the two hindmost

	<u>12345</u>
a	21345
	23145
	23415
	23451
b	32451
	32415
	32145
c	31245
	13245
d	12345
	<u>12345</u>
a	21345
b	23145
c	32145
	31245
	13245
	notes

notes make a change. First the treble hunts into the 3d place (a); the two first notes 2.3 make a change (b). The treble hunts down (c); the two last notes make a change (d); the treble hunts up (e); the two first notes make a change (f); the treble hunts down (g); the two last notes make another change (h).

In the Fourteen changes, the treble first hunts up behind; then the 5 hunts down to lead; the treble then hunts down again into its own place; and the fifth also hunts up into its own place.

The Twenty all over are rung in the same manner as the Twelve all over upon four bells, to which I refer.

In the Twenty changes with one hunt, the hunting note continually hunts up and down through the other notes, and every time it lies either before or behind them, an extream change must be made betwixt the two farthest notes from it. The treble shall be the hunt, and first hunteth up (a). An extream change is made (b); the treble hunts down (c); an extream change is made (d); which

<i>a</i>	13254
<i>b</i>	31254
	32154
<i>c</i>	23154
<i>d</i>	21354
<i>e</i>	12354
<i>f</i>	12345

<i>a</i>	12345
<i>b</i>	21345
	23145
	23415
	23451
	32451
	course

course must be continued to the end. The extream changes may also be made betwixt the two next notes to the hunt. Any note may be made a hunt at pleasure, yet still observing to make the extreams as before.

In the forty eight changes, the 5th and 4th are both hunts, and 1 2 3 do make the six changes; the 5. 4 do hunt down by turns, and when either of them leads, then one of the six changes is made. First the 5 hunts down (a); one of the six changes is made (b); the 5 hunts up into its own place (c); the 4 hunts down (d); another of the six changes is made (e); then the 4 must hunt up, and the 5 down again, &c. which course must be continued to the end.

In the Sixscore changes, four of the notes do make the Twenty four changes, and the fifth note hunts continually through them: so that the course and method of the Sixscore is in effect the same with that of the Four and twenty. For as the Four and twenty comprehended the Six changes on three; so in like

man-

manner the Sixscore comprehend the Four and twenty changes on four, and the Six changes on three. Therefore in the Sixscore there must be two hunts and three extream bells; one of the hunts is term'd the whole-hunt, and the other the half-hunt. The three extream bells do make the Six changes in the same manner as they were made before in the Four and twenty changes upon four bells, and are here also call'd Extream changes: the half-hunt and three extream bells do make the Four and twenty changes in the same manner as the Four and twenty changes on four bells were likewise made: and the whole hunt continually hunts through those four bells, and every time it either leads or lies behind them, one change must then be made in the twenty four.

1 shall here be the whole-hunt,

2 the half-hunt, and 3 4 5 extream bells: so that 2 3 4 5 must

make the four and twenty changes. Every extream change shall be made betwixt the two fartheist extream bells from the half-hunt.

First, the treble hunts up (a). One of the twenty four changes must now be made; and therefore 2 which is the

12345

21345

23145

23415

23451

32451

32415

32145

31245

13245

13425

hunt

hunt in the twenty four, must begin its motion through the **extream** bells (*b*). The treble hunts down (*c*); the half-hunt must proceed in its course (*d*); the whole-hunt hunts up (*e*); The half-hunt proceeds forward (*f*); the whole-hunt moves down (*g*). The half-hunt should now proceed, but having finished its course through the extream bells, therefore an extream change must now be made betwixt the two farthest extream bells from it, which are 3. 4 (*h*). The treble must hunt up (*i*); the half-hunt must now begin its course again through the extream bells (*k*); treble hunts down (*l*); the half-hunt proceeds in its course down (*m*); treble hunts up (*n*); the half-hunt proceeds in its course down (*o*); treble hunts down (*p*); the half-hunt having finished its course, threfore an extream change must be made betwixt the two farthest extream bells from it, which are 3.5 (*q*). The

<i>e</i>	31425
	34125
	34215
	34251
<i>f</i>	34521
	34512
<i>g</i>	34152
	31452
	13452
<i>h</i>	14352
	41352
<i>i</i>	43152
	43512
	43521
<i>k</i>	43251
	43215
<i>l</i>	43125
	41325
	14325
<i>m</i>	14235
	41235
<i>n</i>	42135
	42315
	42351
<i>o</i>	24351
	24315
<i>p</i>	24135
	21435
<i>q</i>	12453
	21453
<i>r</i>	24153
	24513
	24531
<i>s</i>	42531
	treble

treble hunts up (r). The half-hunt
 begins its motion again through
 the extream bells, and first it
 moves up over 4th(s). The whole
 hunt moves down (r); the half-
 hunt must proceed in its course,
 and therefore must move over
 another note (v). And this me-
 thod being observed, will pro-
 duce sixscore changes; and then
 the bells will in course come
 round. Now 'tis observable,
 that the changes at *b d f h k m o*
q r x z and *z*, being set down by themselves,
 that is, the *i* to be excluded, and the changes
 on *2 3 4 5* to be set directly under one an-
 other in the same successive order as they were
 made, it will thereby appear, that those four
 figures have made twelve changes of the
 twenty four, according to the method of the
 first twenty four changes on four bells before
 set down. And whereas here are just half
 the sixscore changes prickt down, so like-
 wise here are just half the four and twenty
 changes made therein: and the remaining
 part of this sixscore being likewise prickt, the
 remaining part of this four and twenty
 would also appear therein, which part being
 added to the former twelve, would make up

the twenty four changes compleat; and the method of them the same in all respects with the first twenty four changes on four bells, pag.

Any note may be made a whole hunt at pleasure, and its first motion at the beginning of the peal may either be up or down. Any note may also be made a half-hunt, and its first motion likewise up or down at pleasure; yet still observing that the half-hunt and three extream bells must make the twenty four changes, as in this last example. So that in the sixscore changes the Learner may observe, that the three extream bells are always assigned for the half-hunt to hunt through; and the half-hunt and three extream bells are also assigned for the whole hunt to hunt through: so that the whole hunt always hunts through four notes, and the half-hunt through three. The extream changes may be made two ways; first, betwixt the two farthest extream bells from the half-hunt, as in this last example; secondly, betwixt the two next extream bells to the half-hunt, which may be called *mediums*, for distinction from the former. But the most usual and easiest way, is to make them betwixt the two farthest notes from the half-hunt.

Whereas the treble or fifth being made whole-hunts, the first of them can neither be moved down, nor the last up, at the beginning of a peal; therefore one of the twenty-four changes must first be made, which is as effectual, as if the treble had moved down, or the 5th up.

The Learner may observe, that two of the four and twenty changes are never made together in any sixscore, but as soon as one is made, the whole-hunt moves through the four notes before another can be made.

The sixscore changes may be rung one hundred and sixty ways, which are thus demonstrable. There are five times four figures to be produced out of five, and not twice four the same figures: as 1234. 1235, 1245, 1345. 2345. with each four the twenty-four changes may be prickt sixteen ways, as before I have shewed on four bells; so that here will be five times sixteen four and twenties, which amount to eighty, and not two alike. Now to each four add the fifth figure which is wanting, as to 1234 add 5, to 1235 add 4, to 1245 add 3, to 1345 add 2, to 2345 add 1, and every fifth figure being hunted through the sixteen four and twenties, which the other four make, as the 5 through the sixteen four and twenties which the

1234 make, and the like of the rest, will produce as many sixscores as there were four and twenties, that is, 80. Then the whole sum may hunt two ways through each four and twenty, that is, up and down at the beginning, which doubles the former number, and makes 160 in the whole.

Treble up, fifth down.

12345	12534	15243	21453	—	14325	13524
—	21534	51243	24153	14253	Exte.	13254
21345	25134	52143	24513	14523	13425	—
23145	25314	52413	24531	—	—	13245
23415	25841	52431	24851	15423	13452	Exte.
23451	52341	25431	24315	Exte.	13542	12345
23541	52314	25413	24135	15432	—	—
23514	52134	25143	21435	—	15342	—
23154	51234	21543	12435	14532	Exte.	—
21354	15234	12543	Exte.	14352	15324	—
12354	Exte.	12453	14235	—	—	—

Treble up, fourth down.

12345	12435	41253	21543	52134	—	14325
—	14235	14253	12543	51234	15342	13425
21345	41235	12453	12534	15234	15324	—
23145	42135	21453	21534	19243	—	13245
23415	43315	24153	25134	—	13524	13254
23451	42351	24513	25314	15423	13542	—
24351	Exte.	24531	25341	14523	—	12354
24345	42531	25431	Exte.	—	13452	12345
24135	42313	25413	52341	14532	14352	—
21485	42153	25143	52314	15432	—	—

Second down, fourth up.

12345	31524	34125	43512	35412	Exte.
	31254	34215	43521	35421	53142
21345	32154	32415	43251	35241	53124
21354	23154	23415	42351	32541	53214
12354	23145	24315	24351	23541	52314
13254	32145	42315	23451	23514	25314
13524	31245	43215	32451	32514	25341
13542	31425	43125	34251	35214	52341
Exte.	31452	43152	34521	35124	53240
31542	34152	Exte.	134512	35142	56

In ringing terms the hunts are named in short, as in the peals here prickt: The first which is named is here understood to be the whole-hunt, and the last the half-hunt. For instance, Treble is the whole-hunt, and fifth the half-hunt; and treble is the whole-hunt, and fourth the half-hunt, &c.

The Changes on six Bells.

There are seyen hundred and twenty changes to be rung on six bells. But the Learner may first practice some shorter peals.

The twenty four changes are thus rung. The treble must continually hunt through the rest of the notes, and every time it leads

or lies behind them, an extream change must then be made between the two farthest notes from it. The treble hunts up (a). A change is made betwixt the two farthest notes from it, which are 2.3 (b). The treble hunts down (c). An extream change is made betwixt 5.6 (d), which method must be continued to the end. Any note may be made a hunt at pleasure, and the extream changes may as well be made betwixt the two nearest notes to the hunt. The Thirty-all-over are rung according to the method of the Twelve-all-over upon four bells, to which I refer.

The thirty six changes are thus rung. The treble hunts up into the third place, and then the two first notes make a change. The treble hunts down again to lead, and then the two notes in the 3d and 4th places do make a change, except the 2. lies next the treble, and then the two hindmost notes. The treble hunts up (a). The two first notes make a change (b).

123456
213456
231456
234156
234516
234561
324561
324516
324156
321456
312456
132456

123456
213456
231456
321456
312456
132456
134256
314256
341256
431256
413256
143256
142356

The

The treble hunts down (c);
 the 2.4 make a change (d). In
 which manner the changes are
 to be made untill the treble
 leads, and the 2 (which may be
 term'd the half-hunt) lies next
 it, and then the extream change is made be-
 hind, as in the last change of this example,
 there being but two of these changes in the
 peal.

In the Twelvescore long-hunts, (other-
 wise called the *Esquire's twelvescore*): the 6th and 5th are hunts, and 1234 do make the
 twenty four changes. The 6th and 5th do
 hunt down by turns, and when either of them
 leads, one of the twenty four changes must
 then be made. The course and method of
 this is the same with that of the forty eight
 changes on five bells, to which I refer the
 Learner.

In the Sevenscore and four, the treble and
 tenor are both hunts; and 2345 do make the
 twenty four changes, 2 being
 the hunt therein. The treble
 and tenor do both hunt at one
 and the same time, the one up,
 and the other down, crossing
 each others course; and when
 one of them leads, the other

always lies behind ; at which time one of the twenty four changes must be made. The extream changes in this peal are made in the same manner as before I have shewed upon four bells. The treble hunts up, and the tenor down (a). One of the twenty four changes is made (b). The treble hunts down, and the tenor up (c). Another of the twenty four changes is made (d). The treble hunts up, and the tenor down (e), &c. Which method must be observed to the end.

In the sixscore changes there is a whole-hunt, a half-hunt, and four extream bells. The half-hunt and four extream bells do make the twenty changes in the same manner as the twenty changes were made upon five bells with one hunt. *pag. 61.* The whole hunt hath a continual motion through the other five notes, and every time it leads and lies behind them, one of the twenty changes must then be made. In this example, treble is the whole-hunt, 2 the half-hunt, and 3456 extream bells ; therefore 23456 must make the twenty changes wherein 20 is the hunt, and every time it lies either before the four extream

extream bells, or behind them, an extream change must then be made, which here shall be betwixt the two farthest extream bells from the half-hunt. The treble hunts up (a). One of the twenty changes must now be made, therefore 2. being the hunt in it, must begin its course through the extream bells (b). The treble hunts down (c); The half-hunt proceeds forward (d); the treble hunts up (e); the half-hunt proceeds forward in its course (f); the treble hunts down (g); the 2. proceeds forward (h); the treble hunts up (i); the half-hunt should now proceed forward, but its course through the extream bells being finished, therefore an extream change must be made betwixt 3. 4, which are the two farthest extream bells from it, (k). The treble must hunt down (l); the half-hunt must now go its course again through the extream bells, and first it moves down under the 6th, (m) &c.

	123456
	213456
	231456
	234156
	234516
	234561
	324561
	324516
	324156
	321456
	312456
	132456
	134256
	314256
	341256
	342156
	342516
	342561
	345261
	345216
	345126
	341526
	314526
	134526
	134562
	314562
	341562
	345162
	345612
	345621
	435621
	which

which method must be continued to the end. Any note may be made a whole hunt at pleasure, or a half-hunt also. And the extream changes may be made betwixt the two nearest extream notes to the half-hunt; but with all observing to make all the extreams in one peal alike. There are four extream changes in each peal, and thirty changes distance from one to another.

The method of the Seven hundred and twenty, hath an absolute dependency upon the method of the Sixscore changes on five bells; for five of the notes are to make the sixscore changes, and the sixth note hunts continually through them, and every time it leads or lies behind them, one of the Sixscore changes must then be made. The method of the Seven hundred and Twenty is in effect the same with that of the Sixscore: for as the Sixscore comprehended the Twenty four changes on four, and the Six on three; so likewise the Seven hundred and twenty comprehend the Sixscore changes on five, the Twenty four changes on four, and the Six changes on three. Therefore here must be three Hunts, and three Extream bells: the three Hunts are thus distinguished; one of them

them is call'd the *whole-hunt*, another the *half-hunt*, and the other the *quarter-hunt*. The *Half-hunt*, *Quarter-hunt*, and three *Extream* bells, are to make the *Sixscore changes*; the *Quarter-hunt* and three *Extream* bells are to make the *Twenty four changes*, and the three *Extream* bells are to make the *six changes*, which are here also called *extream changes*, and made in the same manner as before I have shewed upon four bells. In this example here prickt, *treble* is the *whole-hunt*, *2d* the *half-hunt*, *3d* the *quarter-hunt*, and *4 5 6 extream* bells.. Now 'tis observable, that *4 5 6* are to make the *six extream changes*, which will divide the *seven hundred and twenty* into *six equal parts*; the *3 4 5 6* are to make the *twenty four changes*, wherein the *3d* is the *hunt*, (but in the *seven hundred and twenty* 'tis call'd the *quarter-hunt*;) and *2 3 4 5 6* are to make the *sixscore changes*, wherein the *2d* is the *whole-hunt* (though in the *720* 'tis call'd the *half-hunt*,) by which 'tis evident, that the *treble* continually hunts through these five *2 3 4 5 6*, the *2d* through the four *3 4 5 6*, and the *3d* through these three *4 5 6*; which are assigned for the respective *hunts* to hunt through, from the beginning to the end of the *peal*. First the *treble* hunts up (a). Now one of the *sixscore changes*

changes must be made, therefore the *2d* being the *hunt* in the *score*, must begin its course through the other four notes (*b*). The *treble* hunts down (*c*); the *2d* proceeds in its course (*d*); the *treble* hunts up (*e*). The *2d* proceedeth forward in its course (*f*); the *treble* hunts down (*g*); the *2d* proceeds forward (*h*); the *treble* hunts up (*i*); the *2d*, which is the *half-hunt*, should now proceed forward, but having finished its course through the four bells, therefore the *3d*, which is the *quarter-hunt*, must begin its motion through the *extream* bells (*k*). The *treble* hunts down (*l*). The *half-hunt* must now begin its course again through the four bells, and first therefore it moyes down under the *6* (*m*). The *treble* must hunt up again, and then the *2d* must move down under another bell, which method must be observed untill the *2d* has moved quite down through

1	33456
2	213456
3	231456
4	234156
5	234516
6	234561
7	324561
8	324516
9	324156
10	321456
11	312456
12	132456
13	134256
14	314256
15	341256
16	342156
17	342516
18	342561
19	345261
20	345216
21	345126
22	341526
23	314526
24	134526
25	134562
26	314562
27	341562
28	345162
29	345612
30	345621
31	435621
32	435612
33	435162
34	431562
35	413562
36	143562
37	143526

through the four bells again, and then the 3d must proceed forward by moving over another of the *extream* bells; which method must be observed in the motion of the three hunts, until the *quarter-hunt* hath moved up behind the *extream* bells, and then the *whole* and *half-hunts*, having gone their course again through the bells, an *extream* change must be made: after which the *whole*, *half*, and *quarter-hunts* proceed again in their course as before.

123456

213456	345216	413526
231456	345126	431526
234156	341526	435126
234516	314526	435216
234561	134526	435261
b 324561	b 174562	b 432561
324516	314562	432516
324156	341562	432156
321456	345162	431256
312456	345612	413256
132456	345621	143256
b 134256	435621	b 142356
314256	435612	412356
341256	435162	421356
342156	431562	423156
342516	413562	423516
312561	143562	423561
b 345261	b 143526	b 243561

243516

243516	453216	452613
243156	453126	452163
241356	451326	451263
214356	415326	415263
124356	145326	145263
124536	b 145362	b 142563
214536	415362	412563
241536	451362	421563
245136	453162	425163
245316	453612	425613
245361	453621	425631
b 425361	q 456321	b 245631
425318	456312	245613
425136	456132	245163
421536	451632	241563
412536	415632	214563
142536	145632	124563
b 145236	b 145623	Extrem.
415236	415623	125463
451236	451623	
452136	456123	
452316	456213	
452361	456231	
b 453261	b 452631	

The letter *b* standing by the figures signifies *half-bunt*, that is, the motion of the *half-bunt* in that change; and likewise *q* the *quarter-bunt*. Here are the first *sixscore* changes of *a seven hundred and twenty*; wherein 'tis observable, that all the changes at *b* and *q*, being set down by themselves in the same successive order as they were made, that is, the *to be excluded*, and the changes on the other

ther five figures to be set down directly under one another, and the *extream* change at last, it will thereby appear, that the five figures have made twenty changes of a *sixscore*, according to the method of the example on five bells, pag. 63. with this only difference, these are made on 23456, and those were made on 12345; but the five figures of each have both alike course, the 2d and 3d going the same course in this, as the *treble* and 2d did in that. Now whereas the *sixscore* changes here prickt down are a sixth part of the *seven hundred and twenty*; so likewise are the *twenty changes*, here made by 23456, a sixth part of the *sixscore*: and then consequently, the *seven hundred and twenty* changes being all prickt, the *sixscore* changes on 23456 would plainly appear therein, in the same manner as twenty of them appear in this *sixscore*. Therefore more need not be said of the method of the 720, since the method of the *sixscore* changes on five bells being well understood, will be a sure and certain guide to the Learner: only this one thing farther; in ringing of this peal with any *hunts*, the second *extream* change being made between the two bells which made the first *extream*, will always bring the bells round at the end of the *twelvescore*. But after *twelvescore* are made, they

they cannot in course be brought round until the end of the 720.

The 720 changes may be rung one thousand nine hundred and twenty several ways, which is thus demonstrable. There are six times five figures to be produced out of six, and not twice five the same: as 12345. 12346. 12356. 12456. 13456. 23456. and with each five the *sixscore* changes may be prickt one hundred and sixty ways, as before I have shewed on five bells. Now to eath five add the sixth figure which is wanting, as to 12345 add 6, to 12346 add 5, to 12456 add 3, to 13456 add 2, and to 23456 add 1. And the sixth figure which is added, being hunted through all the several *sixscores* which the other five figures make; for instance, the 6 through the 160 several *sixscores* which 12345 make, and the 5 also through the 160 several *sixscores*, which 12346 make, and the like of the rest; will produce as many *seven hundred and twenties* as there are *sixscores*, that is, six times one hundred and sixty, which amounts to nine hundred and sixty. Then the note that hunts through the other five, may hunt two ways through each *sixscore*, that is, up and down, which will double the former number, and make nineteen hundred and twenty in the whole.



AN
INTRODUCTION
to the Knowledge of
CROSSE PEALS.

These Peals are term'd *cross* in respect of their intricate methods; wherein several notes moving at one and the same time, do thwart or *cross* each other in their course and motion, some moving up, others at the same time down, gives this Denomination to the Peals. The end of pricking them is to make the compleat number of changes by a method differing from that of other Peals. For although five can be varied but 120 ways, and six but 720 &c. yet the methods by which they are varied, are differing, according to the several fancies of the Artist. And as order and method are the only *basis* on which this Art is founded; so the skilful Artists, the better to effect the aforesaid end, have thought fit in most peals to appoint one note to be as it were a Helm or Rudder,

G

by

by which the course of the peal is steered; which note is term'd a *Hunt*, and hath one constant uniform motion throughout the peal, differing from that of the other notes. The manner of its motion is continually through the other notes, that is, from leading to strike behind, and from thence again to lead, which motion, first up and then down, is term'd one compleat Course. Some peals upon five bells, as *old Doubles*, &c. consist of single Courses; there being ten changes in every single Course, and twelve of those Courses in the peal. Other peals upon five bells, as *London Paradox*, &c. consist of double Courses; there being twenty changes in every double Course, and six of those Courses in the peal. Upon six bells there are also single and double Courses, viz. twelve changes in every single Course, as in *Grandfire Bob* &c. and twenty four changes in every double Course, as in *Colledg Bob*, &c. the change wherein the *Hunt* leaves leading being the first change of every Course. Now the methods of these peals being well considered, they will be found more easie than at the first view they may seem to be; for the first Course of any Course Peal being judiciously viewed, the general method of the whole peal will thereby appear; so, all the courses

Courses in a Cross peal do agree in these three respects. First, in the motion of the *Hunt*; secondly, in the motion of the rest of the notes; thirdly, in the making of the changes, which will plainly appear in the following peals, (some few changes in each peal only excepted, as hereafter I shall shew in my Directions to the several peals:) for proof of which I will give an instance in the peal of new Doubles upon five bells, these being the three first Courses of the peal. Wherein 'tis observable, that the last change of the first Course which is 13524, I have set down again at the top of the second Course; and likewise the last change of the second Course which is 15432, I have also put at the top of the third course; which I have done for the plainer Demonstration of what I here intend. So that the ten lowermost changes are the ten changes of each Course.

First therefore, as to the motion of the *hunt*, the 1 which is the *hunt* moves directly up behind, where it lieth twice, and then

First Course	2d Course	3d Course
12345	13524	15432
21354	31542	51423
23145	35124	54132
32415	53214	45312
23451	35241	54321
32541	53421	45231
23514	35412	54213
32154	53142	45123
31245	51324	41532
13257	15342	14523
13524	15432	14253

down again to lead, where it lieth also twice, as appears in each of these three Courses, and the like also throughout the peal.

Secondly, as the 2d, 3d, 4th, and 5th bells move through the first Course, so the bells that lie in the 2d, 3d, 4th, and 5th places in the last change of every course, moves in the same manner also through the next following course. For instance; first, for the bell in the 2d place: in the first course the 2d bell moves down to lead, where it lieth twice, and then dodges until the *treble* comes down to it. So likewise in the second course, the 3d bell lying in the 2d place moves down to lead, where it lies twice, and then dodges until *treble* comes down to it; and also in the third course, the 5th bell lying in the 2d place, moves down to lead where it lieth twice, and dodgeth until the *treble* moves down to it. Secondly, for the bell in the 3d place. In the first course the 3d bell moves down to lead, and there dodgeth until the *treble* comes down to it: so likewise in the second course the 5th bell lying in the 3d place moves down to lead, and there dodgeth until the *treble* comes down to it: and also in the 3d course the 4th bell lying in the 3d place moves down to lead, and there dodgeth until the *treble* comes down to it.

it. Thirdly, for the bell in the fourth place: In the firſt course, the fourth bell moves up behind, then down into the 3d place where it lieth twice, then up again behind; so like- wife in the ſecond course, the 2d bell lying in the 4th place moves up behind, then down into the 3d place where it lieth twice, then up again behind; and also in the third course the 3d bell lying in the 4th place, moves there- fore up behind, then down into the 3d place where it lieth twice, then up again behind. And ſuch uniform motion alſo hath the bell in the 5th place through every course.

Thirdly, that the changes in all the courses of the peal are made alike, will here alſo plainly appear in the three courses. For the firſt change of every course is made on the two firſt and two laſt bells; the ſecond change of every course is made on the four laſt; the third is made on the four firſt; the fourth on the two firſt and two laſt; the fifth on the four firſt; the ſixth on the two firſt and two laſt; the ſeventh on the four firſt; the eighth on the four laſt; the ninth on the two firſt and two laſt; and the tenth ſingle.

And thus in every Croſſ-peal the Courses do all agree, firſt in the motion of the Hunt, ſecondly in the motion of the reſt of the notes, and thirdly in the making of the chan-

ges, as before I have showed. So that these three things being well observed, will be very helpful both in pricking and ringing them; the first and third being most proper to direct the pricking of them, and the first and second the ringing of them. Therefore if the Practitioner do but observe how the changes are made in the first course of a peal, wherein he must have particular regard to the motion of the Hunt, (which a little further help from the following directions to each peal, as to the making of *Exercises* and Bob-changes) he may easily prick down all the following Courses of the same, *parallel* and therefore in the following peals I have only prickt down two or three of the first courses for an example, and then have abridged the rest of the peal by setting down only the changes that are made at the leadings of the Hunt. But note, there are some few *Cambridge-peals* upon five bells, wherein all the courses of each peal do not agree in the aforesaid three respects: For although as to the motion of the *whole-hunt* they do, yet in the motion of the rest of the notes, and consequently in the making of the changes they do not.

It being very difficult to begin the following peals with *cross-hunts*, that is, to make the

2d, 3d, 4th, &c. whole-hunts, I will therefore set down a general rule for making the first changes at the beginning of each Peal, wherein consists the great difficulty. In any Cross-peal the ~~whole~~ ^{old} ~~whole~~ hunt may move either up or down at the beginning; and the motion of the ~~whole~~ ^{old} ~~whole~~ hunt in the first course of each of the following peals will direct the first motion of any cross hunt, and consequently of making the first changes in that peal. For Example, admit the 4th were made the ~~whole~~ ^{old} hunt in the peal called *Old doubles and singles* upon five bells, and to hunt up at first: now to know how to make the first changes, observe how the change is made wherein the treble (which is there the ~~whole~~ ^{old} ~~whole~~ hunt) moves up out of the 4th place, and in the same manner must the change be made wherein the 4th bell also moves up out of that place: therefore as the change wherein the treble moves up out of the 4th place is a single behind; so likewise must the change wherein the 4th bell moves up out of that place, be also a single behind: thus, 1 2 3 5 4; and then as the next change wherein the treble lieth still behind is double of the four first bells; so likewise the next change wherein the 4th bell lieth still behind, must also be made on the four first, thus, 2 1 5 3 4, &c. Or admit the 4th were

were to hunt down at the beginning, then observe how the change is made wherein the treble hunts down out of the 4th place, and so in like manner must the change be made wherein the 4th hunts also down out of that place: therefore as the change wherein the treble hunts down out of the 4th place, is double of the four first bells; so likewise must the change wherein the 4th bell hunts down out of that place, be also double of the four first thus, 21435; then as the *treble* makes a *single* when it moves down out of the 3^d place, so likewise must the 4th next make a *single change* in moving down out of the 3^d place thus 24135, &c. which observations will guide the making of the first changes in any cross peal with any Hunts; but observe whensoever the first change of any peal happens to be *single*, it must be made at the back-stroke to prevent cutting compass; and the like when a double change happens first in a peal of Triples and Doubles. And moreover by the way observe, that all the following peals are so prickt, that in ringing them at half-pulls, if the first change of each peal is made at the fore-stroke, the single changes in each peal will always be made at the back-stroke; and also the double changes in Triples and Doubles, excepting some few Single

in two or three peals. But when it happens that the first change of a peal is made at the back-stroke, then consequently the bells at the end of the peal will come round at a fore-stroke change.

In such peals on five bells where *singles* are made in the 3d and 4th places at the leadings of the *whole-hunt*, the *extreams* may there be made three ways in each peal; viz. every time the *half-hunt* lieth next the *whole-hunt*; secondly, every time it lieth behind; thirdly, every time the *half-hunt* lieth next the *whole-hunt*, and also behind: in this last way there are six *extreams* in each peal, but in other ways only three in each; the *extreams* being always made when the *whole-hunt* leads, and betwixt the two farthest *extream* bells from the *half-hunt*.

In such peals upon five bells wherein there are three *extreams*, and made in the 3d and 4th places at the leadings of the *whole-hunt*; the rest of the *singles* at the leadings of the *whole-hunt* may be made two ways in each peal, viz. either in the 2d and 3d, or the 4th and 5th places; if they are made in the 2d and 3d, then the *extreams* must be made when the *half-hunt* lyeth behind; but if the *singles* are made behind, then the *extreams* must be made when the *half-hunt* lieth next the *whole-hunt*,

hurts, the extremes being always made between the two next extreme bells to the half-hurt.

In all the following peals the figures standing by themselves at the title of the peal, are the *hurts* in the peal there prickt: for instance, in the first cross-peal upon five bells call'd *Old doubles and singles*, the two figures standing thus 1 and 2, are the *hurts* in that peal; 1 is the *whole-hurt*, 2 the *half-hurt*, and the like of the rest.

All peals of *doubles* upon five bells, which go sixty changes compleat without any *singlē*, by making of two *extremes* they will go 120. And also all peals of *doubles* upon six bells, and *triples* and *doubles* upon six, which go 360 changes without any *singlē* or *extreme*, by making of two *extremes* they will go 720. The *extremes* in all these compleat peals proceeding from one and the same cause, are therefore to be made after one manner, according to this general and infallible rule: Wheresoever any two of the *extremes* bells are in course to make a change, those two bells by lying still will effectually make the *extreme*. So that the making of the *extreme* in *doubles* upon five bells, necessitates the making of a *single change* at the same time, by reaſon that the two *extremes* bells which should

should contribute to the making of the ~~day~~
~~be~~ change, do lie still; so that the ~~single~~
~~change~~ is accidental, and very impudently
called the ~~extrem~~. When the ~~extrem~~ in
~~triples~~ and ~~doubles~~ upon six bells are made at
~~double~~ changes, then there happens two ~~singl~~
in the peal; but when they are made at ~~tripl~~
~~changes~~, then those two changes will become
~~double~~, and consequently the 720 will then
go compleat without any ~~singl~~. Upon five
bells the first ~~extrem~~ must be made within
in sixty changes from the beginning, and the
second ~~extrem~~ just sixty changes from the
first. Upon six bells the first ~~extrem~~ must be
made within 360 changes from the begin-
ning, and the second ~~extrem~~ just 360 chan-
ges from the first. The easiesſt way in pra-
ctice, is to make the ~~extrem~~ at the leadings
of the ~~whole~~ ~~change~~; wherein it may be obser-
ved as a general rule, That in all peals upon
six bells, where the ~~half~~ ~~shut~~ dodgeth behind
at the ~~begin~~; there the first ~~extrem~~ may be
made either the first, second, or third time;
the ~~half~~ and ~~quarter~~ ~~hours~~ dodg together be-
hind, and then the second ~~extrem~~ must be
made the third time. those two bells dodg a-
gain together behind, after the first ~~extrem~~
is made. And also in all such peals upon six
bells, where the ~~doubles~~ at the leadings of the
~~whole~~

whole-hunt are made on the four middle bells, there the first *extream* may be made either the first, second, or third time the *half* and *quarter-hunts* do make a change in the 2d and 3d places, and then the 2d *extream* must be made the third time those two bells come there again to make a change after the first *extream* is made. The *singles* at all these *extreams* must be made by the *half* and *quarter-hunt*. The first *extream* in any peal may also be made at any place, where two of the *extream* bells are in course to make a change according to the preceding general rule; and then the making of the second *extream* may be guided by observations taken from the changes at the leadings of the *whole-hunt*: for at the leadings of the *whole-hunt* the *half* and *quarter-hunts* always come together to make a change in one place, just at 120 changes distance from one another throughout each peal. Now as the second *extream* must be made just 360 changes from the first, so the making of it may thus be guided: Look how many changes, or else how many leadings of the *whole-hunt* the first *extream* is made after the *half* and *quarter-hunts* have made a change together, so many changes or leadings of the *whole-hunt* must the second *extream* be made, after the third following time that those two bells

bells do make a change in the same place again. And likewise in all peals, where there are single and double *bobs*, the same observations will also hold good, in making the *extreams* either after the single or double *bobs* as before ; there being likewise 120 changes distance between the single *bobs* and also between the double *bobs* : so that if the first *extream* is made at a single *bob*, the second must then be made at the third following single *bob*, and the like also at double *bobs*. And such kind of observations, according to the nature of the peal, will guide the making of the second *extream* in any peal, either upon five or six bells. Wherein 'tis observable, that the second *extream* must always be made by the same two bells, and in the same place where the first was made , which two bells will in course lie apt for that purpose ; and the rest of the bells will also in course lie in the same places at the second *extream* where they lay at the first. After the making of the first *extream*, the method of the peal goeth on as if no *extream* had been made ; and also after the making of the second *extream* if any remaineth, it also goes on, until in course the bells come round.

In all compleat peals of *doubles* upon six bells there may also moveable *extreams* be made,

made, which are made according to this rule; wherefover any two of the *extream* bells are together, and in course to lie still, those two bells by making a change will thereby make the *extream*, which is as effectual as the fixed *extream*, the reason and ground of both being one and the same. There are also two of these *extreams* in each peal, and the second always made 360 changes from the first, and the making of it guided by such kind of observations as before. When moveable *extreams* are made, then there will be two triple changes in the 720; but when fixed *extreams* are made, then two *singles*.

The art of *cross-pricking* may receive a being from this consideration. As every compleat peal of plain changes upon one number comprehends the compleat peals on all lesser numbers; so likewise every compleat *cross-peal* must of necessity do the like, although their cross course permits it not to be done so regularly and demonstrably as the former. From whence may be inferr'd, that every note in a *cross-peal* must of necessity lie as many times in one place, as the rest of the notes are capable of making changes; and also that two or more of the notes must jointly lie in the same places as many times, as the remaining number are also capable of making changes;

ges: this being a certain touchstone to prove all cross-peals after they are prickt, and must be held as a principle on which to ground such methods of pricking, that the course of all the notes may demonstrably tend to produce those effects. And from hence it is, that the whole *hunt* immediately derives the manner of its uniform motion through the courses of each peal. And the changes in every course are as so many guides to conduct the rest of the notes in such sort, that they may be prepared to lie at the last change of the course in apt places for each succeeding course to receive them, and to perform the like. Now as the changes in all the courses of a peal are made alike, except as before; so in the composing of *cross-peals*, by prickings of one course may soon be discovered, whether or no a compleat Peal will from thence arise.

Cross

Cross Peals.

*The Twenty four, Doubles and Singles on
four Bells:*

THIS peal consists equally of *double* and *single* changes; one change is *double*, the next *single*, and so throughout. 1 is here the *hun*, and 2.3.4 *extream* bells. Every *double* change is made on the two first and two last bells, and every *single* on the two middle bells, except when the 1 leads, and then behind which is call'd *extream*. All the bells have a direct Hunting-course up and down until 1 leads, and then the bell in the second place lyeth still, whilst the two hind-bells make a dodg; which being made, all the bells proceed again in their Hunting course. The three changes of (a.b.c) are the three *extream* changes.

There are three ways to make the *extream* changes. First, every time

1234
2143
2413
4231
4321
3412
3143
1324
1342
3124
3214
2341
2431
4213
4123
1432
b 1423
4132
4312
3421
3241
2314
2134
1243
the c 1234

the *hun*t leads, as in the peal here prickt; secondly, every time it lies behind; thirdly, every time it leads and lies behind: in this last way there are six *extream* changes in the peal, but in the other two ways, only three *extream*s; the *extream* changes must always be made betwixt the two fartheit bells from the *hun*t. Any bell may *hun*t at pleasure, and it may move either up or down at the beginning of the peal. If the 1 or 3d do *hun*t down, or the 2d or 4th up at the beginning, the first change must be *single*, and made of the back-stroke (if'tis rung at half-pulls) to prevent cutting compass; but if either of those bels do *hun*t the contrary way, then the first change must be *double*.

Old Doubles and Singles.

1 and 2.

ONE change is *double*, the next *single*, and so by turns. The treble hath a direct hunting course, as in plain changes. Every *double* change is on the four first bells, and the treble is one of the two bells that makes every *single* change, except when it leads, and then the *single* is in the 3d and 4th place.

✓ places; but when 2 lies next the treble, then the *single* is behind, which is call'd *extream*. Every time the treble leaves leading, the two first bells continue slow dodging, until the treble comes down and displaceth them. And when the treble moves down out of the 5th place, the bell that comes into it lies still there, untill the treble comes thither again, except when the *extream* change is made behind. Every bell lies twice together in the 3^d and 4th places, except when the treble leads, and also when it hinders them in hunting.

This old peal may be rung by a new course, which differs from the former only in the *single* changes that are made every time the *whole-bunt* leads, viz. every *single* may be made either in the 2^d and 3^d, or 4th and 5th places. If they are made in the 2^d and 3^d, then the *extream*s must be made when the *half-bunt* lies behind; but if they are made in the 4th and 5th places, then

12345	51432	—
21435	15342	12543
24135	15432	Extre.
42315	—	12534
42351	13254	—
24531	13524	13425
24513	—	13245
42153	12435	—
41253	Extre.	14532
14523	12453	14352
14253	—	—
41523	15324	15243
45123	15234	15423
54213	—	—
54231	13452	12354
45321	13542	Extre.
45312	14235	12345
54132	14325	—

the extremes must be made when the half-bell lies next the whole-bell, the extremes being always made in the 3d and 4th places.

London Paradox.

I and 2.

ONE change is double, the next single, and so by turns. The motion of the treble is after this manner; in hunting up, first, it makes a dodg in the 2d and 3d places, then it lies twice in the 4th place, and four times behind; in which manner also it hunts down again, and then leads four times. The rest of the bells have a like course and motion with that of the treble, till the treble leads. Now 'tis observable, that every single change is made in the 2d and 3d places until the treble leads, and then in the 3d and 4th places; but when 2 lies next the treble, then an extreme behind. The changes

12345	Extre.
21435	12453
24135	—
21453	14235
24153	14325
42313	13452
45213	13542
42531	—
45231	15334
54321	15224
53421	12543
54312	Extre.
53412	12534
35142	—
21542	15243
35124	15423
31524	14532
13254	14352
13524	—
15342	13425
15432	13245
	12354
14523	Extre.
14253	12345
12435	—

at the leadings of the *whole-hunt* have an absolute dependency upon the course of the twenty four changes, *doubles* and *singles* upon four bells; and the *extreams* to be made as many ways as in that peal, which are here guided by the motion of the *half-hunt*.

Phænix

5 and 4.

ONE change is *double*, the next *single*, and so by turns. Every bell leads twice, and lies behind four times. Every *single* is made in the 2d and 3d places, until the 5th comes behind, and then in the 3d and 4th places; but when the 4th leads, (the 5th being behind) the *single* is in the 2d and 3d places.

1	2	3	4	5	1	2	3	4	5
2	1	3	4	5	1	2	3	4	5
3	2	1	4	5	1	2	3	4	5
4	3	2	1	5	1	2	3	4	5
5	4	3	2	1	1	2	3	4	5

London pleasure.

1 and 2.

THIS peal in the former printing of it was prickt another way, but I have here

here transposed that Course, which in my opinion renders it more easie and practical.

<u>12345</u>	23154	35142	<u>15432</u>
21345	21354	35412	<u>14532</u>
<u>23145</u>	12354	35421	<u>14523</u>
32145	13254	53421	<u>14253</u>
<u>31245</u>	13524	53412	<u>12453</u>
31425	13542	53142	<u>12435</u>
<u>34125</u>	31542	51342	<u>14235</u>
34215	31524	15342	<u>14325</u>
<u>34251</u>	31254	15324	<u>14352</u>
32451	32154	15234	<u>13452</u>
<u>32415</u>	32514	12534	<u>13425</u>
23415	32541	<u>12543</u>	<u>13245</u>
<u>23451</u>	35241	12543	<u>12345</u>
23541	35214	15243	
<u>23514</u>	35124	15423	

*Mr. Tendring's Peal, call'd
Grand Paradox.*

I and 5.

ONE change is *double*, the next *single*, and so by turns. The motion of the *whole-hunt* is after this manner: first, it moves up into the *2d* and *3d* places, lying twice in each; then it moves up and makes a *dodg* behind, and then lieth still one change in the

3rd place; then it makes another dodg behind, and so moves down into the 3^d and 2^d places lying twice in each as before, and then leads four times. Every other bell hath a like course and motion with that of the treble until the leadings of the treble, and then observe, that every time the treble goeth to lead and leaves leading, the *double* change is made on the two first and two last bells, except when it goeth to lead if the *half-hunt* lies next it, and then not. Every bell leads four times, and every *single* is made behind. The change wherein each bell leaves leading, is always made on the four first bells, except as before.

<u>12345</u>	45321	21534	43152	13524	14523
21354	<u>45312</u>	25143	43125	13542	—
21345	54132	25134	41352	—	13254
23154	54123	52314	41325	12453	23245
23145	51432	52341	14352	12435	12354
32415	51423	53214	14325	14253	12345
32451	15243	53241	13452	14235	—
34215	15234	35421	13425	—	
34251	12543	35412	—	15432	
3521	12534	34521	15324	15423	
4512	21543	34512	15342	14532	

What

What you please, Doubles and
Singles.

Every bell leads four times, and lies behind twice, except when the *extrem* is made behind; and twice in the second place, except when the *extrem* is made before: and note, when the treble is before the fourth stroke, the *single* is in the 2d and 3d, the next time the *single* is behind; but at other times the *single* is in the 3d and 4th places. When any bell leaves leading the *double* change is on the two first and two last, and the *extrems* are made by turns, first behind, then before, and so on to the end, for there are six *extrems*.

12345	34521	21435	45231	14352	14235
21354	34251	21345	54213	14532	14325
21534	43215	23154	54123	15423	13452
25143	43125	23514	51432	extre.	
25413	41352	32541	51342	15432	13425
52431	41532	32451	15324	13254	
52341	14523	34215	15234	13524	12534
53214	14253	34125	12543	15342	12354
53124	12435	43152	extre.	extre.	13245
35142	extre.	43512	15243	extre.	extre.
35412	12453	45321	—	13542	12345

Old Doubles.

1. and 2.

THE changes are all *double*, except one *single* exery time the treble leads. The treble hath a perfect hunting course as in plain changes, and every other bell hath a like hunting course with that of the treble until the treble leads, and then a *single* is made in the 3^d and 4th places; but when the 2 lies next the treble, the *single* is behind which is call'd *extream*.

12345	13254	51432	12453	15234	14532
21435	13524	15342	—	—	14352
24153	31254	15432	14235	12543	—
42513	32145	—	14325	extre.	13425
45231	23415	14523	—	12534	13245
54321	24351	14253	13452	—	—
53412	42531	—	13542	15243	12354
35142	45213	12435	—	15423	extre.
31524	54123	extre.	15324	—	12345

New Doubles.

1. and 2.

THE changes are all *double*, except one *single* at every leading of the treble. The tre-

treble hath a perfect hunting course as in plain changes; and when it moves up from leading, the two first bells dodg untill it comes down again and displaceth them. Every bell that comes into the 3d place lies there twice, and then moves up behind; but the bell which lies there when the treble leaves leading, moves down. Every bell lies twice behind, except at the changes wherein the treble goeth to lead and leaves leading. Every time the treble leads, a *single* change is then made in the 3d and 4th places; but when the 2 lies next the treble, an *extream* behind.

12345	13254	51324	12453	—	14352
21354	13524	15342	—	12543	—
23145	31542	15432	14235	extre.	13425
32415	35124	—	14325	12534	13245
23451	53214	14523	—	—	—
32541	35241	14253	13452	15243	12354
23514	53421	—	13542	15423	extre.
32154	35412	12435	15324	—	12345
31245	53142	extre.	15234	14532	—

Reding Doubles.

1 and 2.

THE treble hath a direct hunting course as in plain changes, and when it moves up from leading the two first bells dodg until it comes

comes down again and displaceth them ; and whilst they dodg before , every bell that comes down into the 3d place lies there twice, and then moves up again behind. But after the dodging all the bells go a direct hunting course up and down, until the dodging again hindreth them as before. Every bell lies twice behind, except when the treble leaves leading if the 2d lies next it , and then the *double* is made on the two first and two last bells ; by which means the two hind-bells then make a dodg , which happens in course once in twenty changes, that is , every second time the treble leaves leading. By this method it will go sixty changes , and then an *extream* must be made. The *extreams* in this peal may be made according to the preceding general rule set down in the *Introduction*. Here the first *extream* is made at the end of sixty changes, the bells lying 1 3 2 ; and when they come to lie

12345	12534	12354
21354	31543	—
23145	25134	13524
32415	52314	15342
23451	25341	—
32541	52431	14253
23514	25413	12435
32154	52143	—
31245	51234	14325
13425	15324	13452
14352	13542	—
41532	—	15234
45123	14235	12543
54213	12453	—
45231	—	15423
54321	14523	14532
45312	15432	—
54132	—	13245
51423	13254	extre.
15243	extre.	12345

so again, the second *extream* must be made; the *extream* is made behind, two of the *extream* bells lying there, and the *single* is made in the 2d and 3d place at both the *extreams*.

*Grandsire.**I and 5.*

THE treble hath a direct hunting course as in plain changes, and every other bell hath also a like hunting course with that of the treble except when the *bobs* hinder. The *bobs* are double changes, and made on the two first and two last bells according to this rule, *viz.* every time the *treble* goes to lead and leaves leading, a *bob-change* is then made, except the 5th lying next it makes a change there with it, and then not. Now 'tis observable, that once in twenty changes, that is, at every second leading of the treble, the 5th lies next it, and consequently there is but one *bob-change* then to be made, but at other times two; so that at one leading of the treble there is but one *bob-change* made, at the next leading there are two, and so successively by turns, which for distinction may be call'd *single* and *double bobs*, The two bells that dodg behind at a *bob* continue there dodg-

dodging until the treble comes up and dis-
placeth them, and at every *bob-change* the
bell in the *3d* place lieth
still, and then moves
down to lead. By this
method it will go sixty
changes; and to carry on
the course *extreams* must
be made, there being
two in the peal. The
manner of making an *ex-
tream* I have at large
shewed in the *Introduction*, and the *extreams*
may here be made in any
place according to the
general rule there set
down. The easiest way
in practice is to make
them at the leadings of
the treble; at any single
bob it may be made be-
hind, two of the *extream*
bells lying there, and to
lie still whilst the bells
in the *2d* and *3d* places
do make the *single change*: at any double *bob*
it may be made in the *2d* and *3d* places, so
that the *single* must there be made behind.

12345	52143	52431
21354	51234	25341
23145	15324	23514
32415	13542	32154
34251	31524	31245
43521	35142	13254
45312	53412	extre.
54132	54321	13245
51423	45231	—
15243	42513	15342
12534	24153	13524
21543	21435	—
25134	12453	14253
52314	14235	12435
53241	41253	—
35421	42135	15234
34512	24315	12543
43152	23451	—
41325	32541	13452
14352	35214	14325
13425	53124	—
31452	51342	15423
34125	15432	14532
43215	14523	—
42351	41532	12354
24531	45123	extre.
25413	54213	12345

If the first *extream* is made at the single *bob*, the second must be made at the third following single *bob*; or if the first is made at a double *bob*, the second must be made at the third double *bob* following, as in this peal here prickt, where the first *extream* is made at a double *bob*, and the second also made at the third following double *bob*.

This peal will go with any *hunts*, and to begin it on the four hind bells; but then in ringing it at half-pulls, the first change being made at back-stroke to prevent cutting compass, the bells at the end of the peal will come round at a fore-stroke change. Therefore the better way is to begin it on the four first bells, which may also be done with any *hunts*, excepting 1.3, 1.5. and 2.3, 2.4, 2.5, wherein the first change of each may be a *bob*. And observe, that in any way of beginning it, the bells must all proceed in such a perfect hunting course as the first change directs them, until the first *bob* comes to be made.

Old Triples and Doubles.

ON E change is *triple*, the next *double*, and so by turns, except one *single* at the end of every sixty changes. Every *triple* change

change is made on the two first, the two middle, and two last bells; and every *double* is made on the four middle bells, except when the *hunt* leads and then on the four hind bells. Treble is here the *hunt*, and hath a direct hunting course up and down as in plain changes: the rest of the bells have also a direct hunting course up and down except when the *treble* leads, and then each bell that was hunting up (except that in the 2d place) makes a dodge with the next bell below it, and then proceeds forward again in its course up; and each bell which at the same time was hunting down, makes a dodg with the next bell above it, and so proceedeth forward in its course down; which method will carry on the peal five courses of the *hunt*, that is sixty changes as they are here prickt,

In the 120 there is also a *half-hunt*; and when the *whole-hunt* leads and the *half-hunt* lies next it, a single change must then be made, either in the 3d and 4th, or 5th and 6th places; but observing when the *half-hunt* comes again to lie next the *whole-hunt*, another single change must be made in the

1	2	3	4	5	6	1	3	5	2	6	4
2	1	4	3	6	5	3	1	2	5	4	6
2	4	1	6	3	5	3	2	1	4	5	6
4	2	6	1	5	3	2	3	4	1	6	5
4	6	2	5	1	3	2	4	3	6	1	5
6	4	5	2	3	1	4	2	6	3	5	1
6	5	4	3	2	1	4	6	2	5	3	1
5	6	3	4	1	2	6	4	5	2	1	3
5	3	6	1	4	2	6	5	4	1	3	2
3	5	1	6	2	4	5	6	1	4	3	7
3	1	5	2	6	4	5	1	6	3	4	2
1	3	2	5	4	6	1	5	3	6	2	4

Same

same place where the first was made. These single changes are called *extreams*, there being two in every *sixscore*, and the last of them always falls out in course to be made just 60 changes from the first, that is, at the fifth leading of the whole *hunt* after the first *extream*.

In the 240 there is also a *half-hunt*; and when the *whole-hunt* leads, and the *half-hunt* lies next it, a single change being then made in the 4th and 5th places, will bring the bells round at *twelvescore*, there being four *singles* in the peal, one of which falls in the course at the end of every sixty changes.

In the 720 there is a *whole*, *half*, and *quarter-hunt*, and every time the *whole-hunt* leads and the *half-hunt* lies next it, a single change must then be made in the 4th and 5th places as in the *twelvescore*; but when the *quarter-hunt* lies next the *half-hunt*, that is, when the three *hunts* come together before, (which always happen at the end of every *twelvescore*) then the *single* must be made behind, which is call'd *extream*, there being three of them in the peal.

The

15	63	42	32	54	61
51	36	24	23	45	16
53	12	64	24	31	56
35	21	46	42	13	65
32	54	16	41	26	35
23	45	61	14	62	53
24	36	51	11	42	35
42	63	15	41	62	53
46	21	35	46	15	23
64	12	53	64	51	32
61	45	23	65	43	12
16	54	32	56	34	21
16	45	23	53	62	41
61	54	32	35	26	14
65	13	42	32	51	64
56	31	24	23	15	46
53	62	14	21	34	56
35	26	41	11	24	36

The *seven score and four* triples and doubles are the same with the former except at the leadings of the treble, and then a *single* is always made in the *3d* and *4th* places; but when the *2* lies next the treble, an *extremis* is made in the *4th* and *5th* places. This peal is grounded on the *twenty four* doubles and *singles*, the four middle bells making them at the leadings of the treble.

Grandsire Bob,

1, 2 and 4,

THE general method of this peal is the same with that next before, but with this difference; whereas in that peal *singles* were made at the end of every *sixty* changes to carry on the course, in this there are *double* changes made in their stead, which are called *Bob-changes*, and made when the treble leads in the *2d* and *3d* and the *5th* and *6th* places, whereas at other times the *double* is there made on the four hind bells.

The Practitioner may observe these rules in the ringing of it, *viz.* whatsoever bells he followeth when he hunteth up, he must follow the same bells again, and in the same order, the next time he hunts down, as in these

chan-

changes here prickt, where the treble in hunting up first follows 2, then 4, and then 6; and when it comes behind, first it follows 2 again, then in its hunting down it follows 4 and 6 in the same order as when it hunted up; which is also observed in the ringing of any other bell, but with this difference betwixt the *whole-hunt* and the rest of the bells, viz. Every time the *whole-hunt* leaves the *treble's* place and hunts up, it followeth different bells from what it did in its former hunting up, as may be seen in this example: where in its first hunting up it first follows 2, then 4, then 6; whereas in the next hunting up it first follows 3, then 2, then 4. But the first time any other bell leads after a *bob*, whatsoever bells it then follows in its hunting up, it follows the same bells likewise and in the same order every time it hunts up, and consequently every time it hunts down unto the next *bob*; as in this example, where 2 in its first hunting up, first follows 4, then 6, then 5, and likewise when it next hunts up it follows 4 6 5 as before, &c. But when the *whole-hunt* is the second bell which he follows in hunting up,

1	2	3	4	5	6
2	1	4	3	6	5
2	4	1	6	3	5
4	2	6	1	5	3
4	6	2	5	1	3
6	4	5	2	3	1
6	5	4	3	2	1
5	6	3	4	1	2
5	3	6	1	4	2
3	5	1	6	2	4
3	1	5	2	6	4
1	3	2	5	4	6
1	3	5	2	6	4
3	1	2	5	4	6
3	2	1	5	6	4
2	3	4	6	5	1
2	4	3	5	6	1
4	2	5	3	6	1
4	6	5	3	1	2
6	4	5	2	1	3

he must follow it again when he next lies behind.

'Tis observable, that at every leading of the treble the two hind bells dodg; and when soever the *half-hunt* dodgeth there, a *bob* must then be made, except the *quarter-hunt* dodgeth there with it, and then not; which is an infallible rule, by which he that rings the *half-hunt* may always give notice of the *bobs* as well when the peal is inverted, as in the ordinary way of ringing it. The *bobs* fall out in course single and double, the one single, the next double; and so by turns; there being three single *bobs* and three double *bobs* in the *eighteenscore*, and consequently six of each in the 720.

The aforesaid method being observed, will carry on the course of the peal to the end of *eighteenscore*, which is just half the 720, and then it terminates, as appears in the *eighteenscore* here prickt: but by making an *extream* that number may be doubled; for then *eighteenscore* changes more will go in course according to the former method; and another *extream* being likewise made at the end of the last *eighteenscore* will compleat the 720. The manner of making an *extream* I have shewed at large in the *Introduction*, pag. 90. where I have also set down a general rule for

for making them, to which I refer.

The first *extream* may be made either the first, second, or third time that the half and quarter *hunts* dodg behind; or else at the first, second, or third single *bob*; at either of which places the *single* must be made behind.

123456	325416	342516	143526	
214365	234561	324156	<i>bob.</i>	124536
241635	243651	231465	134562	125463
426153	426315	213645	315426	
462513	462135	126354	351246	152643
645231	641253	123645	532164	156234
654321	614523	216354	523614	
563412	165432	261534	256341	165324
536142	<i>bob.</i>	625143	265431	163543
351624	156423	652413	624513	
315264	514632	564231	642153	136452
132546	541362	546321	461235	<i>bob.</i>
135264	453126	453612	416325	163425
312546	435216	435162	143652	
321456	342561	341526	<i>bob.</i>	136245
234165	324651	314256	134625	132654
243615	236415	132465	316452	
426351	263145	134256	361542	123564
462531	621354	312465	635124	125346
645213	612534	321645	653214	
654123	165243	236154	562341	152436
561432	162534	263514	526431	154263
516342	615243	625341	254613	
153624	651423	652431	245163	145623
156342	564132	564213	421536	<i>bob.</i>
513624	546312	546123	412356	154632
531264	453621	451632	143265	
352146	435261	415362	142356	145362

<i>bob.</i>	— —	<i>bob.</i>	— —	I 46532
I 54326	I 62345	I 35426	I 62453	<i>bob.</i>
— —	I 63254	— —	I 64235	I 64523
I 45236	— —	I 53246	— —	— —
I 42563	I 36524	I 52364	I 46325	I 46253
— —	I 35642	— —	<i>bob.</i>	I 42635
I 24653	— —	I 25634	I 64352	— —
I 26435	I 53462	I 26543	— —	I 24365

Here are *eighteenscore* changes wanting one, which one if it were made double as the former, would bring the bells round, therefore an *extream* must be made as in this change I 23465, the two hind bells making the *extream*, and the bells in the 3^d and 4th places making the *single*. Now in regard that this *extream* is made the second time the *whole-hunt* leads after a double *bob*, therefore the second *extream* must be made the second time the *whole-hunt* leads after the third double *bob* following.

This peal may be rung with any *hunts*, and to begin the changes *triple* and *double* as in this here prickt.



Fifty three LONDON-Peals upon Five, Six, Seven, and Eight Bells, composed by F. S.

Crambo.

THE changes are all *single*; it hath a perfect course, and may be prickt many ways.

12345	42513	52431	32154	35421	15243
21345	45213	25431	23154	35412	51243
21435	45231	25413	23145	53412	51234
24135	54231	25143	32145	53142	15234
24153	54321	52143	32415	35142	15324
42153	45321	52134	23415	35124	13524
42135	45312	25134	23451	53124	13542
42315	54312	25314	32451	51324	31542
24315	54132	52314	32541	51342	31524
24351	45132	52341	35241	15342	31254
42351	45123	25341	35214	15432	13254
42531	54123	23541	53214	51432	13245
24531	54213	23514	53241	51423	31245
24513	52413	32514	53421	15423	31425
					13425

13425	34215	43152	41523	12453	12354
13452	34251	41352	14523	21453	12345
31452	43251	41325	14253	21543	
34152	43521	14325	41253	12543	
34125	34521	14352	41235	12534	
43125	34512	14532	14235	21534	
43215	43512	41532	12435	21354	

The Primrose.

I and 2.

THE treble hath a perfect course as in plain changes. And when it hunts up out of the 2d place it makes two *singles* together, and the like when it hunteth down. When it leads, the *single* is in the 3d and 4th places, except when 2 lies next it, and then an *extream* behind. Every bell (except the treble) leads four times, and lies still behind until the treble displaceth it, except at the *extream*.

12345	51432	15234	
21435	15342		
24135	15432	12543	
24315			Exte.
23451	14523	12534	
32541	14253		
35214		15243	
35124	12435	15423	
31524		Exte.	
13254	12453	14532	
13524		14352	
31254	14235		
32154	14325	13425	
32514		13245	
35241	13452		
53421	13342	12354	
54312		Exte.	
54132	15324	12345	

New

Orpheus.

12345	14253	34125	54312	32541	52134
13254	41523	43152	53421	23514	51243
13245	41532	43125	53412	23541	51234
31254	45123	34215	35421	25314	15243
31245	45132	34251	35412	25341	15234
32154	54123	32415	53142	52314	12543
32145	54132	32451	53124	52341	12534
23154	51423	23415	51342	25431	21543
23145	51432	23451	51324	25413	21534
21354	15423	24315	15342	24531	12354
21345	15432	24351	15324	24513	12345
12435	14523	42315	13542	42531	
12453	14532	42351	13524	42513	
21435	41352	43215	31542	45231	
21453	41325	43251	31524	45213	
24135	14352	34521	35142	54231	
24153	14325	34512	35124	54213	
42135	13452	43521	53214	52431	
42153	13425	43512	53241	52413	
41235	31452	45321	35214	25143	
41253	31425	45312	35241	25134	
14235	34152	54321	32514	52143	

One change is double, the next single, and so by turns.

New Doubles and Singles.

I and 2.

ONE change is *double*, the next *single*, and so by turns. The treble hath a direct hunting course up and down as in plain changes, and every time it goeth to lead and leaves leading, the change is *double* on the two first and two last bells, the rest of the *double* changes are on the four first. The treble is one of the two bells that makes every *single* change except when it leads, and then the *single* is made in the 3d and 4th places; but when the 2 lies next the 1, then an *extream* is made behind. When the treble leaves the two first bells, they continue slow dogding until treble comes down and displaceth them. Every bell (except the treble) lieth twice in the 3d place.

The

12345	51324	15234
21354	15342	—
23154	15432	12543
32514	—	Extre.
32541	14523	12534
23451	14253	—
23415	—	15243
32145	12435	15423
31245	Extre	—
23254	12453	14532
13524	—	14352
31542	14235	—
35142	14325	13425
53412	—	13245
53421	13452	—
35241	13542	12354
35214	—	Extre.
53124	15324	12345

The Morning Star.

I and 2.

THE treble hath a direct hunting course as in plain changes; and every time it hunts up, it makes two *singles* together, and the like when it hunts down: when it leads the *single* is behind, but when 2 lies next it an *extrem* is made in the 3d and 4th places. Every time the treble goeth to lead and leaves leading, the double is on the two first and two last bells, and every bell except the treble leads four times together.

12345	51432	14523	15243	—
21354	54132	14532	—	14253
23154	54312	—	13425	14235
23514	53421	12354	13452	—
25341	35241	extre.	—	15324
52431	32514	12534	12543	15342
54213	32154	—	extre.	—
54123	31254	14352	12453	12435
51423	13245	14325	—	extre.
15432	13254	—	13542	12345
15423	—	15234	13524	

The

The Quirister.

I and 2.

This peal consists most of *double* changes; the treble hath a direct hunting course as in plain changes, and every time it hunts up and down it makes a *single* in the 3d and 4th places; and when it leads, the *single* is behind, but when 2 lies next it an *extream* is made in the 3d and 4th places.

When the treble leaves the two hind bells, they continue dodging untill it comes up again and displaceth them, and then they hunt directly down; the first to lead, and the other into the 2d place: that which moves to lead, having lead four times, gives place to the treble; but

12345	32514	15234
21354	35241	15243
23145	53421	—
23415	54312	14352
24351	54132	14325
42531	51423	—
45213	15432	12543
45123	15423	extre.
41532	51432	12453
14523	54123	—
14532	54213	15324
41523	52431	15342
45132	25341	—
45312	23514	14253
43521	23154	14235
34251	21345	—
32415	12354	13542
32145	extre.	13524
31254	12534	—
13245	—	12435
13254	13425	extre.
31245	13452	12345
32154	—	—

when

when the Treble hath done leading it takes the treble's place again, and leads four times more and then hunts directly up; the other bell which moved down into the 2d place lies there twice, and then the Treble in hunting down moves it into the 3d place where it lies still, untill the Treble in hunting up moves it back into the 2d place, where having lain twice it hunteth up. This Peal is as musical, easie, and practical as any of this kind that ever was prickt.

*The Falcon.**I and 2.*

His Peal consists most of *double changes*.

The treble hath a direct hunting course as in plain changes, and every time it hunts up and down it makes a *single* in the 3d and and 4th places, and when it leads a *single* is also made there, but when 2 lies next it the *extream* is made behind. When the treble leaves the two first bells they continue there until it comes down again and displacesthem, but observe, when the treble moves into the 5th place, and again from thence, the *double* is on the two first and two last bells, by means of which the two first bells then dodg,

dodg, but before and after they lie still. Every bell lies twice in the 3^d place and then hunts up, except that which lies there when the treble leaves leading.

12345	53241	—	15243
21354	35421	14235	15423
23145	53412	14325	—
23415	53142	—	14532
32451	51324	13452	14352
23541	15342	13542	—
32514	15432	—	13425
32154	—	15324	13245
31245	14523	15234	—
13254	14253	—	12354
13524	—	12543	extre.
31542	12435	extre.	12345
35124	extre.	12534	—
35214	12453	—	—

Merry Andrew.

1 and 2.

ONE change is *double*, the next *single*, and so by turns. The treble leads four times, lies behind four times, and twice in every other place. Every other bell leads four

Ever four times. When the treble leaves the two hind-bells they continue dodging untill it comes up again and displaceth them. Every *single* is made behind until the treble hinders, and then in the *2d* and *3d* places. When the treble leads and the *2d* lies next it, then an *extream* is made in the *3d* and *4th* places.

When the treble goes to lead and leaves leading, the *double* is on the two first and two last bells, and when every other bell goes to lead and leaves leading, the *double* is on the four first.

<u>12345</u>	51423	23514	15243
21354	15432	32154	15234
21345	15423	32145	12543
23154	14532	31254	<i>extre.</i>
23145	14523	31245	12453
32415	41532	13254	—
34215	41523	13245	13542
32451	45132	12354	13524
34251	45123	<i>extre.</i>	15342
43521	54213	12534	15324
45321	52413	—	—
43512	54231	14352	14235
45312	52431	14325	14253
54132	25341	13452	12435
54123	23541	13425	<i>extre.</i>
51432	25314	—	12345

May-day.

i and 5.

ONE change is *double*, the next *single*, and so by turns. When the treble goes to lead and leaves leading, the *double* is on the two first and two last bells; and when every other bell goes to lead and leaves leading, the *double* is on the four first.

The treble hath a constant dodging course, for in its hunting up it first makes a dodg in the second and third places, and then another behind, and then it lies still one change in the 5th place; then in its hunting down it makes another dodg behind, and also another in the 2d and 3d places, and then leads four times. So that the treble is one of the two bells that makes every *single* until it leads, and then 'tis made in the 2d and 3d pla-

12345	15132	12543
21354	11523	15234
23154	15123	12534
21345	54213	—
23145	54231	14352
32415	52413	13452
32451	52431	14325
34215	25341	Extre.
34251	25314	14235
43521	23541	—
43512	23514	15324
45321	32154	13524
45312	31254	15342
54132	32145	13542
51432	31245	—
54123	13254	12453
51423	12354	14253
15432	13245	12435
14532	Extre.	Extre.
15423	13425	12345
14523	—	—
41532	15243	—

places, except when the 5th lies behind, and then an *extream* is made in the 3^d and 4th places. When the treble leaves the two hind-bells they continue slow dodging, until it comes up again and displaceth them. Every bell leads four times.

St. Dunstan's Doubles.

I and 2.

THE changes are all *double* except one *single* every 2^d time the treble leads, there being six in the peal. The treble is a perfect *hunt*; and every time it goeth to lead and leaves leading, the *double* is made on the two first and two last bells, at which changes the bells in the 3^d place lie still and then move down, and the two hind-bells at the same time dodg: but at other times all the bells have a direct hunt-

12345	13245	12453
21354	—	—
23145	15423	13542
32415	14532	15324
34251	—	—
43521	12354	14235
45312	<i>extre.</i>	<i>single.</i>
54132	12534	14253
51423	—	—
15432	14352	13524
14523	13425	15342
41532	—	—
45123	15243	12435
54213	<i>single.</i>	<i>Extre.</i>
52431	15234	12345
25341	—	—
23514	14325	—
32154	13452	—
31245	—	—
13254	12543	—
	<i>single.</i>	<i>extre.</i>

ign

ing course. When the treble leads, and the *2d* lieth either in the *2d* or *3d* places; then a *single* must always be made betwixt the two next *extream* bells to the *2d*.

Church Doubles.

I and 2.

THE changes are all *double* except six *sing-
les* as the former. The treble is a perfect *hunt*; and every time it moves up into the *5th* place, and also out of it, the *double* is then made on the two first and two last bells, at which time the bells in the *3d* place do lie still and then move up; and the two first bells at the same time *dodg*. When the treble leads, and the *2d* lieth either in the *2d* or *3d* places, then a *single* must always be made betwixt the two next *extream* bells to the *2d*.

In this and the former peal the *sing-
les* may be

<i>12345</i>	<i>13254</i>	<i>14325</i>
<i>21435</i>	<i>single.</i>	—
<i>24153</i>	<i>13245</i>	<i>12543</i>
<i>42513</i>	—	<i>Extre.</i>
<i>24531</i>	<i>14532</i>	<i>12453</i>
<i>42351</i>	<i>15423</i>	—
<i>24315</i>	—	<i>15324</i>
<i>42135</i>	<i>12354</i>	<i>13542</i>
<i>41253</i>	<i>Extre.</i>	—
<i>14523</i>	<i>12534</i>	<i>14235</i>
<i>15432</i>	—	<i>single.</i>
<i>51342</i>	<i>13425</i>	<i>14253</i>
<i>53124</i>	<i>14352</i>	—
<i>35214</i>	—	<i>15342</i>
<i>53241</i>	<i>15243</i>	<i>13524</i>
<i>35421</i>	<i>single.</i>	—
<i>53412</i>	<i>15234</i>	<i>12435</i>
<i>35142</i>	—	<i>Extre.</i>
<i>31524</i>	<i>13452</i>	<i>12345</i>

be made in another manner, *viz.* when the *whole-hunt* leads, and the *half-hunt* lieth either in the 4th or 5th places, a *single* must then be made betwixt the two next bells to the *half-hunt*; but at other times a *double* change to be made when the *whole-hunt* leads, as in the former way.

Stedman's Principle.

THE changes are all *double*, two *singles* excepted. One *double* is made on the two first and two last bells, the next on the four last, and so by turns successively; excepting every sixth change, which is *double* on the four first bells, and for distinction is called a *Parting* change. All the bells have a like course. The general method is this; the three first bells go the *six* changes, and the two hind-bells in the mean time dodg; then a *Parting* change is made which parts the two hind-bells, moving that in the fourth place down into the 3^d, and that in the 3^d place up into the 4th, and then the three first bells go the *six* again, the two hind-bells in the mean time dodging as before; and then another *Parting* change is made, and so successively on. Every bell that comes behind

continues there dodging six changes with one bell and six with another, and then in course the *Parting* change brings it down. One *six* cuts compass, the next doth not, and so by turns successively. In the *six* which cut compass the two first bells of the three makes the first change of it, but in the other the two last of the three. By this method the peal will go sixty changes, and to carry it on farther *extreams* must be made. An *extream* is made by the lying still of two bells when in course they should make a change, as before I have shewed more fully in the *Introduction*, pag. 90. but withall observing, that whereas in this peal the bells have all a like course, therefore they may all be termed *extream* bells, and consequently the *extreams* to be made according to this general rule, *viz.* the first *extream* may be made by any two bells that are in course to make a change within the compass of the first sixty changes of the peal; and the second *extream* must be made according to this rule, Whatsoever two bells are dodging behind at the first *extream*, when the same two bells come to dodg there again, is a certain warning for the second *extream* to be then made. And observe, how many changes the *first extream* is made from a *parting* change; so many likewise must the last

be made after a *Parting* change also.
And the single and *extream* comes in course

12345	42135	52431	24513	51324
31354	41253	25341	42153	15342
23145	14523	52314	24135	13524
32415	41532	53241	21453	31542
23451	45123	35214	12435	35124
24315	54132	32541	14253	53142
42351	51423	23514	41235	35412
43215	15432	33154	14325	34521
34251	51342	31245	13453	43512
43521	53124	13254	31425	45321
45312	35142	extre.	34152	54312
54321	31524	13245	43125	53421
53412	13542	31254	41352	35241
35421	15324	32145	14532	53214
34512	51234	23415	41523	52341
43152	15243	33451	45132	25314
34125	12534	34215	54123	23541
31452	21543	43251	51432	32514
13425	25134	42315	15423	23154
14352	52143	24351	51243	21345
41325	25413	42531	52134	12354
14235	24531	45213	25143	extre.
13453	42513	54231	21534	12345
21435	45231	52413	12543	
14153	54213	52134	15234	

such of them to be made in the same place

and by the same bells at the last *extream*, as they were at the first. Here the *singles* are made behind, and the *extreams* in the 2d and 3d places ; and as the 4th and 5th bells do dodg behind at the first *extream*, so likewise when they come to dodg there again, the second *extream* is then made, the treble leading at both of them, as appeareth in the peal here prickt.

The first *Parting* change is here made the third change at the beginning, and that *cuts compafs*.

In all the several ways of ringing this peal if the *Parting* changes are made at the fore stroke, as in course they are in this here prickt, then cutting compafs is always on the same *sixes*, as in this peal : but when the *Parting* changes are made at back-stroke, then the contrary *six* always cuts compafs to what doth here.

Peals upon Six Bells.

The single Method.

THE changes are all 123456 135264 164253
 single, and treble 213456 — — 164235
 is the *bunt*. When the 213465 153642 —
 treble moves up out of 231465 153624 146352
 the 2d place, the two 231456 135624 146325
 first bells continue slow 321456 135642 164325
 dodging untill the tre- 324156 — — 164352
 ble comes there again. 234156 153426 —
 And when the treble 234516 153462 146523
 moves down out of the 324516 135462 146532
 fourth place, the two 324561 135426 164532
 hind-bells likewise con- 234561 — — 164523
 tinue slow dodging un- 235461 153264 —
 til the treble comes 325461 153246 146235
 there again. When the 325416 152346 146253
 treble leads, (if 'tis rung 235416 152364 142653
 at half-pulls) the *fore-* 235146 — — 142635
stroke change (that is, at 325146 125643 —
 the third stroke of the 321546 125634 124356
 treble's leading) is made 312546 126534 124365
 in the 3d and 4th places, 312564 126543 123465
 the rest of the changes there are made he- 132564 — — 123456
 hind.

hind. By this method it will go sixfom changes.

To ring 240. When the *whole-hunt* leads, and the *half-hunt* dodgeth behind; the *fore-stroke change* must then be made in the *2d* and *3d* places, as in this here prickt, where the *2d* is the *half-hunt*, and there are little marks set at the *fore-stroke changes*.

To ring 360. When the *whole-hunt* leads, and the *half* and *quarter-hunts* dodg behind, the *fore-stroke change* must then be made in the *2d* and *3d* places as before.

To ring 720. When the *whole-hunt* leads, and the *half-hunt* dodgeth behind, the *fore-stroke change* must then be made in the *2d* and *3d* places as before, except the *quarter-hunt* dodgeth there with the *half-hunt*, and then in the *3d* and *4th* places as at other times. The *2d* and *4th*, or the *2d* and *6th* may be the *half* and *quarter-hunts*, or others at pleasure.

“Note, in all the following peals upon six bells, the *bobs* are double changes, and always made at the leadings of the *whole hunt* (except *Nonsuch Bob*, for there the *Bobs* are made at the change wherein the *whole-hunt* goeth to lead, and not when it doth lead.) And whereas in the following

“lowing peals the directions for calling *bob*
“runs thus; viz. *Every time the half-hunt*
“*dodgeth behind, a Bob must then be made, &c.*
“*tis there implied, That whereas every*
“*time the whole-hunt leads, the two hind-*
“*bells then dodg; therefore when the half-*
“*hunt dodgeth there at the leading of the*
“*whole-hunt, a bob must then be made. And*
“*in like manner also must all the bobs in the*
“*following peals be made at the leading of*
“*the whole-hunt. He that rings the half-*
“*hunt may best call bob in all peals.*

A Cure for Melancholly.

Doubles and Singles. The Treble is the whole-hunt, which leads four times, lieth behind as many, and twice in every other place. When it moves up out of the fourth place, the two bells in the third and fourth places continue dodging until it comes down there again, and then the two hind-bells dodg until the Treble displaceth them. The Treble is one of the bells which maketh every *double* change, except when it lieth still behind, and then the *double* is on the four first, and also when it leads the *double* is

on the four last. Every *single* is made in the fifth and sixth places, except when the Treble lieth there, and then in the third and fourth places. Every bell except the Treble lieth four times in the second place. By this method it will go six-score changes, but by making of *bobs* it will go 240, 360, or 720. The *bob* is a *double* change at the leading of the Treble, wherein the bell in the fourth place lieth still.

To ring 240. Every time the *half-hunt* dodgeth behind, a *bob* must then be made as in this here prickt, where 2 is the *half-hunt*.

To ring 360. Every time the *half* and *quarter-hunts* dodg together behind, a *bob* must then be made.

To ring 720. Every time the *half-hunt* dodgeth behind a *bob* must then be made, except the *quarter-hunt* dodgeth there with it, and then not.

123456	134625
213465	—
213456	162345
231465	162354
231456	163245
234165	163254
234156	—
243516	125634
245316	125643
243561	126534
245361	126543
423561	—
425361	154263
423516	154236
425316	152463
452136	152436
452163	—
451236	143526
451263	143562
415236	<i>bob</i>
415263	134526
145236	134562
145263	—
142536	156423
142563	156432
—	<i>bob</i>
156423	165423
156432	165432
—	<i>bob</i>
165423	132654
165432	132645
—	136254
143652	136245
143625	—
—	<i>bob</i>
134652	124365
—	124356

2 may be the half hunt, and 4 123465
 the quarter hunt, or others at 123456
 pleasure.

The Morning Exercise.

Doubles and singles. 123456 | — — | 142365
 treble is the whole 213465 | 164352 | 142356
 hunt, and hunteth up 213456 | 164325 | —
 into the 2d, 3d, and 4th 231465 | bob | 146532
 places, lying twice in 231456 | 163452 | 146523
 each; then having made 234165 | 163425 | bob
 a dodg behind, it lyeth 234156 | — — | 145632
 still in the sixth place, 243516 | 165243 | 145623
 and then makes another 243561 | 165234 | —
 245316 | 156243 | 143265
 245361 | 156234 | 143256
 254631 | — — | 134265
 254613 | 154326 | 134256
 256431 | 154362 | —
 256413 | bob | 136524
 265143 | 153426 | 136542
 265134 | 153462 | bob
 Treble moves down out 261543 | — — | 135624
 of the fifth place, the 261534 | 152643 | 135642
 two hind-bells dodg un- 216543 | 152634 | —
 till it comes up there 216534 | 125643 | 132465
 again; during which 126543 | 125634 | 132456
 time the bell in the 4th 126534 | — — | 123465
 place lieth still. And 162543 | 124365 | 123456
 when the Treble moves

up

up out of the second place, each bell that comes there lieth four times, until the Treble comes down there again. Every *single* is made behind. By this method it will go 120 changes: and by making of *bobs* it will go 240, 360, or 270. At the *bobs* the bell in the 2d place always lieth still.

To ring 240. Every time the *half-hunt* dodgeth behind, a *bob* must then be made, as in this here prickt, where 2 is the *half-hunt*.

The warning for the *bobs* in the 360 and 270, is the same with that in the peal next before: 2 may be the *half-hunt*, and 4 the *quarter-hunt*, or others at pleasure.

The City Delight.

Doubles and Singles. Treble is the *whole-hunt*, and lieth four times before, four times bebind, and twice in every other place. When it moves up out of the third place, the *singles* are made in the second and third places until it comes there again, and then bebind until it moves up again out of the third place. When it moves down out of the fourth place, the two hind-bells dodg until it comes up there again, during which time the bell

bell in the fourth place lieth still. By this method it will go 120, and by making of *bobs* it will go 240, 360, or 720. At the *bobs* the bell in the second place always lieth still; and the warning for them is the same with that in the two last peals. In the 240 here prickt, 2 is the *half-hunt*; and in the 360 or 720, the 2 and 4 may be the *half* and *quarter-hunts*, or others at pleasure.

123456	265143	153462	126534	143256
213465	256143	—	126543	134265
213456	251634	156234	—	134256
231465	251643	156243	124365	—
231456	215634	165234	124356	135642
234165	215643	165243	142365	135624
243165	125634	—	142356	<i>bob</i>
234615	125643	164352	—	136542
243615	152634	164325	145623	136524
246351	152643	<i>bob</i>	145632	—
264351	—	163452	<i>bob</i>	132465
246531	154326	163425	146523	132456
264531	154362	—	146532	123465
265413	<i>bob</i>	162534	—	123456
256413	153426	162543	143265	

London Nightingale.

Doubles and Singles. Treble is the *whole-hunt*, and lieth four times before, four times

times behind and twice 123456 ————— 16345
 in every other place. 213465 126543 163254
 When it moves down 213456 126534 —————
 out of the 5th place, 231465 162543 125634
 the two hind-bells con- 231456 162534 125643
 tinue dodging until it 234165 ————— 152634
 comes there again, du- 234156 153624 152643
 ring which time the bell 243516 153642 —————
 in the fourth place li- 423516 bob 164523
 eth still. And when 243561 156324 164532
 the two hind-bells leave 423561 156342 bob
 dodging then the two 245361 ————— 165423
 first bells dodg until 425361 134562 165432
 the hind-bells dodg a- 245316 134526 —————
 gain, and then they 425316 bob 143652
 cease. By this method 452136 135462 143625
 it will go 120; and by 452163 135426 bob
 making of bobs it will 451236 ————— 146352
 240, 360, or 720. At 451263 142356 146325
 the bobs the bell in the 415236 142365 —————
 second place always ly- 415263 124356 132465
 eth still; and the warning for them is the 145236 124365 132456
 same with that in the preceding peals. In 154236 136245 123456
 the 240 here prickt, 2 is the *half-hunt*; and 154263 136254
 in the 360 or 720, the 2 and 4 may be the
half and quarter-hunts or others at pleasure.

The Evening Delight.

Doubles and Singles. Treble is the *whole-hunt* and leads four times, lies behind four times, and twice in every other place, except in the 2d and 3d places where it makes a *dodg* every time it hunts up and down. Every other bell hath the same course with the *whole-hunt*; but observing, when they come down and have made a *dodg* in the second and third places, they lie still one change in the second place, and then make another *dodg* there, and so hunt up as the Treble did. But note, when the Treble goeth to lead and leaves leading, the bells in the third and fourth places lie still. Every *single* is made in the second and third places, and every bell lieth four times behind. By this me-

123456	—	—
213465	146253	
231465	164253	
213645	bob	
231645	146235	
236154	164235	
263154	—	—
236514	162453	
263514	126453	
265341	bob	
256341	162435	
265431	126435	
256431	—	—
254613	124653	
245613	142653	
254163	124563	
245163	142563	
241536	—	—
214536	145236	
241356	154236	
214356	145326	
124365	154326	
142365	—	—
124635	153462	
142635	135462	
	thod.	

thod it will go 120. and by making of *bobs* it will go 240, 360, or 720. At the *bob-change*, the bell in the 4th place always lieth still.

To ring 240. Every time the *half-hunt* dodgeth in the second and third places a *bob* must then be made, as in this here prickt, where 6 is the *half-hunt*.

To ring 360. Every time the *half* and *quarter-hunts* dodg together in the second and third places, a *bob* must then be made.

To ring 720. Every time the *half-hunt* dodgeth in the 2^d and 3^d places a *bob* must then be made, except when the *quarter-hunt* dodgeth there with it, and then not.

In the 360 or 720, the 6 and 5 may be the *half* and *quarter-hunts*, or else 2 and 4, or others at pleasure.

Colledge Doubles.

TReble is the *whole-hunt*, and hath a direct hunting course. When it moves down out of the 5th place, the two hind-bells dodg until it comes there again; during which time

time the bell in the fourth place lieth still: but otherwise the five hind-bells have a direct hunting course. By this method it will go *sixty* changes; and by making of *bobs* it will go 120, 180, 360. At the *bob*-changes the bell in the second place always lieth still.

To ring 120. Every time the *half-hunt* dodgeth behind, a *bob* must then be made; as in this here prickt, where 2 is the *half-hunt*.

To ring 180. Every time the *half* and *quarter-hunt* dodg together behind, a *bob* must then be made.

To ring 360. Every time the *half-hunt* dodgeth behind a *bob* must then be made, except when the *quarter-hunt* dodgeth there with it, and then not.

In the 180 or 360, 2 and 4 may be the *half-*

1 2 3 4 5 6	1 5 6 2 3 4
2 1 3 4 6 5	1 6 5 2 4 3
2 3 1 4 5 6	— — — — — —
2 2 4 1 6 5	1 6 4 3 5 2
2 4 3 6 1 5	<i>bob</i>
2 4 6 3 5 1	1 6 3 4 2 5
2 6 4 5 3 1	— — — — — —
2 6 5 4 1 3	1 6 2 5 3 4
2 5 6 1 4 3	1 2 6 5 4 3
2 5 1 6 3 4	— — — — — —
2 1 5 6 4 3	1 2 4 3 6 5
1 2 5 6 3 4	1 4 2 3 5 6
1 5 2 6 4 3	— — — — — —
5 1 2 6 3 4	1 4 5 6 2 3
5 2 1 6 4 3	<i>bob</i>
5 2 6 1 3 4	1 4 6 5 3 2
5 6 2 3 1 4	— — — — — —
5 6 3 2 4 1	1 4 3 2 6 5
5 3 5 4 2 1	1 3 4 2 5 6
5 3 4 6 1 2	— — — — — —
5 4 3 1 6 2	1 3 5 6 4 2
5 4 1 3 2 6	<i>bob</i>
5 1 4 3 6 2	1 3 6 5 2 4
1 5 4 3 2 6	— — — — — —
bob	1 3 2 4 6 5
1 5 3 4 6 2	1 2 3 4 5 6
— — — — — —	

half and quarter-hunts, or others at pleasure.

By making of two *extreams*. the 360 may be doubled. They are to be made according to the rules in the *Introduction*, pag. 90.

Non-such Bob.

Doubles. Treble is the *whole-hunt*, and hath a direct hunting course. When it moves up out of the third place, the bell that comes there lieth still until the Treble comes down there again; during which time the two first bells dodg. When the Treble leaves the two hind-bells, they dodg until the change wherein the Treble goeth to lead, and then one of them moves down; but as soon as that change is made, the two hind-bells dodg again until the Treble moves up and parts them. Every time the Treble leads, the *doubla* is made on the four

1 2 3 4 5 6	5 3 2 6 4 1
2 1 3 4 6 5	3 5 2 6 1 4
2 3 1 4 5 6	5 3 2 1 6 4
2 3 4 1 6 5	5 3 1 2 4 6
3 2 4 6 1 5	5 1 3 2 6 4
2 3 4 6 5 1	1 5 3 6 2 4
3 2 4 5 6 1	1 5 6 3 4 2
2 3 4 5 1 6	1 1 6 3 2 4
3 2 4 1 5 6	5 6 1 3 4 2
3 2 1 4 6 5	5 6 3 1 2 4
3 1 2 4 5 6	6 5 3 2 1 4
1 3 2 5 4 6	5 6 3 2 4 1
1 3 5 2 6 4	6 5 3 4 2 1
3 1 5 2 4 6	5 6 3 4 1 2
3 5 1 2 6 4	6 5 3 1 4 2
3 5 2 1 4 6	6 5 1 3 2 4
5 3 2 4 1 6	6 1 5 2 4 3
3 5 2 4 6 1	b9b

hind-

hind-bells throughout the peal. By this method it will go *sixty* changes; and by making of *bobs* it will go 120, 180, or 360. The *bob* is always made at the change wherein the Treble goeth to lead, the two first and two last bells making it.

To ring 120. Every time the *half-hunt* dodgeth before, is a warning for a *bob* to be made the next time the *whole-hunt* goeth to lead; as in this here prickt, where 6 is the *half-hunt*.

To ring 180. Every time the *half* and *quarter-hunts* dodg together before, is a warning for a *bob* to be made when next the Treble goeth to lead.

To ring 360. Every time the *half-hunt-dodgeth* before, is a warning for a *bob* to be made the

165324	643162
163542	453512
613524	446211
631542	453261
635124	543216
365214	453126
635241	451362
365421	415326
635412	445336
365142	42563
361524	412536
316542	421563
<i>bob</i>	425136
136524	245316
235641	423361
315624	245631
351642	425613
356124	245163
536214	241536
356241	214563
536421	124653
356412	126435
536141	216453
531624	261435
513642	264153
153462	624513
154326	264531
514362	624351
541326	264315

next time the Treble goeth to lead, except the quarter-hunt dodgeth there with it, and then not.

In the 180 and 360, the 6 may be the half-hunt and 5 the quarter-hunt, or others at pleasure.

By making of two *extreams* the 360 may be doubled; they must be made according to the rule in the *Introduction*, pag. 90.

The *bobs* in this peal may also be made at the leadings of the *whole-hunt* as in other peals, and the bell in the fourth place to lie still at every *bob-change*. The warning for them in the 120, 180, and 360 being the same with that in the *Colledge Doubles*, pag. 143.

London Doubles.

THE Treble is the *whole-hunt*; and hath a direct hunting course. When it moves down out of the fifth place the two hind-bells dodg until it comes there again, during which time the bell in the fourth place lieth still. When the Treble is behind, the two first bells make a change; but at other times the

the leading bell lieth still. By this method it will go sixty changes, and by making of bobs it will go 120, 180, or 360. At the bob-changes the bell in the second place always lieth still. The warning for the bobs in the 120, 180, and 360, is the same with that in *College Doubles*, p. 143. By making of two extremes it will go 720. The extremes must be made according to the rule in the *Introduction*, pag. 90.

In the 120 here prickt, 2 is the half-hunt; and in the 180 and 360, 2 and 4 may be the half and quarter-hunts, or others at pleasure.

123456	543263	156342	—
213465	542136	—	164523
231456	524316	134562	bob
234165	523461	bob	165432
243615	253641	135426	—
246351	256314	—	143652
426531	265134	342356	bob
425613	261543	124365	146325
452163	216534	—	—
451236	126543	136245	132465
415253	162534	163254	123456
145236	—	—	—
154263	153624	125634	—
114236	bob	152643	—

Triples, Doubles, and Singles		Triples, Doubles, and Singles	
123456	153462	123456	162345
214365	bob	214365	126354
241635	135426	241356	—
246135	—	243156	156423
264315	153246	234516	bob
623451	152364	325461	154632
632541	—	352641	—
365214	125634	536214	134256
356124	126543	563124	143265
351624	—	561324	—
315264	162453	516342	163542
132546	164235	153624	136524
135264	—	135642	—
312546	146325	316524	126435
321456	bob	361542	bob
324156	164352	365142	124653
342516	—	356412	—
435261	146532	534621	154326
453621	bob	543261	145362
546312	164523	452316	—
364132	—	425136	165243
561432	146253	421536	bob
516342	142635	412563	162534
153624	—	145236	—
bob	124365	bob	132465
135642	123456	142563	123456

Dow

Doubles, and
Triples.

123456	152364
214365	135346
241356	165432
243165	165432
234083	166045
226451	164523
362541	135123
633214	134256
653124	143265
651342	151024
615324	153024
163542	135052
136524	125493
365642	125493
351624	166055
356142	124530
365412	166055
654521	161252
648051	148325
468035	152364
426135	159232
411653	166045
452635	152364
146253	166045
246421	132365
142355	123456

Single Bells.

123456	334562
214365	135346
241356	165432
426153	165432
462513	165432
645231	152364
462531	152364
645213	142364
654123	142364
561452	142364
516342	166045
153024	166045
156342	125493
513624	125493
511264	125493
352446	152430
625410	152430
234561	132364
225461	132364
234516	132364
243156	132364
421365	166045
412635	166045
146253	166045
666	123456
164235	123456

London

London 1883.

22466	363534
314352	226542
241350	186520
451355	555
126555	140532
216251	186520
136531	235642
216012	906
154162	186520
224498	126694
126525	154541
156054	186520
116255	186520
102455	106514
126268	240514
140080	240514
116245	240514
126264	240514
057451	240514

City Bob.

These six peals will each of them go *sixty* changes without any *bob*, and by making of *bobs* each of them will go 120, 180, and 360. In three of them, viz. *Triples Doubles* and *Singles*, *Single-bob*, and *City-bob*, at the *bob-changes* the bell in the fourth place always lyeth still; whereas at the rest of the changes which are made at the leadings of the whole-hour, the bell in the second place lieth still. And in the other three peals, viz. *Triples Doubles and singles dodging behind*, *Doubles and Triples*, and *London Bob*, at the *bob-changes* the bell in the second place always lieth still, whereas at the rest of the changes that are made at the leadings of the whole-hours, the bell in the fourth place lieth still. The warning for the *bobs* in the 120, 180, and 360, in each of these six peals is the same with that in the 120, 180, and 360 in *Collegio Doubles*, p. 143. Each of these peals will go 720 with two *extremes*, which must be made according to the rule in the *Introduction*, page 90. In the 120 of each there prickt, viz. in *City Bob*, *London Bob*, and *Triples Doubles and singles*, the 2 is the *half-hour*, and in the other three peals the 3 is the *half-hour*.

In the 180 and 360 of each peal, the 2 and 4 may be the *half* and *quarter-hours*, or others at pleasure.

120 or more to done this along will stand
to gain you 120, and you will now make
120 bobs, 180, **New Bob.** marks to stand the
bells without ringing twice, marks to stand

Triples and Doubles. The general method
of this Peal is the same with *Grandison*
Bob, and the bobs also made as in that peal. It
will go 120, 180, or 240, and by making of
two extremes it will go 360 or 480; and with
six singles it will go 720.

To ring 120. Every time the *half-hunt*
dodgeth behind a *bob* must then be made.

To ring 180. Every time the *half* and *quarter-hunt* dodg together behind, a *bob* must
then be made; and by making of two extremes
it will go 360. The first *extrem* may be made
at the first, second, or third *bob*; observing to
make the second *extrem* at the third following
bob from the first *extrem*, where the *sing*
les in both must be made behind.

To ring 240. The *bobs* throughout the
peal are made by the same rule as in the 120;
but farther observing, when the *whole* and
half-hunt come together before, if the *quarter-hunt*
lieth either in the third or fourth
places, then a *single* must be made betwixt the
two next extremes bells to the *quarter-hunt*.

The 2 may be the *half-hunt* and 4 the *quarter-hunt*, or others at pleasure.

Colledge

Colledge Little Bob, dodging behind.

Triples and Doubles. The Treble is the whole-hunt, and hath a direct hunting course. When it moves down out of the fifth place, the two hind-bells dodg until it comes there again. All the bells have a direct hunting course, but observing, that when any bell moves up into the fourth place, if the Treble is then any where below it, it lies there twice, and then moves down again. By this method it will go sixty changes; and by making of bobs it will go 120, 180, or 360. At every bob-change the bell in the second place lieth still. The warning for the bobs is the same with that in *Colledge Doubles*, pag. 143. And the two extremes in the 720 must be made according to the rule in the *Introduction*, page 90.

In

456	162345
4365	126354
241356	—
423165	156423
432615	bob
346251	154632
364521	—
635412	134256
653142	143265
561324	—
516342	163542
153624	136524
135642	—
346524	126435
361542	bob
635124	124653
653214	—
562341	154328
526431	145362
254613	—
245163	165243
421536	bob
412563	162534
145236	—
bob	132465
142563	123456

In the 120 here prickt, 3 is the *half-hunt*, and in the 180 or 360, 2 and 4 may be the *half* and *quarter-hunts*, or others at pleasure.

This peal in practice will be found very plain and easie, and also good Musick.

Colledge Little Bob, dodging before and behind.

Triples and Doubles. The Treble hath a direct hunting course, and when it moves up out of the second place, the two first bells dodg until it comes there again; and also when it moves down out of the 5th place, the two hind-bells dodg until it comes there again. Every bell that moves up into the fourth place, if the Treble is any where below it, lieth there twice and then hunts down; and also every bell that moves down into the third place, if the Treble is any where above it, lieth there twice, and then hunts up behind. By this method it will go *sixty* chan-

changes, and by making of *bobs* it will go 120, 180, or 360. At every *bob-change* the bell in the second place lieth still. The 2 is the *half-hunt* in the 120 here prickt, and 2 and 4 may be the *half* and *quarter-hunts* in the 120 and 360, or others at pleasure.

The warning for the *bobs* is the same with that in the *Colledge Doubles*, p. 143. And the two extremes in the 720 must be made according to the general rule in the *Introduction*, page 90.

Cours Bob.

Triples and Doubles. The Treble hath a direct hunting course. Every bell that comes before and behind makes a *Dodge*, then lieth still, and so moves away, except the bell that lieth still behind when the treble leads, and also that bell which leads when the Treble lieth behind, both which do *dodge* before and after their lying still, and then move away. When the treble leads and lieth behind, the *double* is made on the four middle bells. By this method it will go *sixty* changes; and with *bobs* it will go 120, 180, or 360. At the *bob-changes* the bell in the fourth place lieth still.

To

To ring 120. Every time the *half-hunt* maketh a change next the *whole-hunt*, a *bob* must then be made, as in this here prickt, where 2 is the *half-hunt*.

To ring 180. Every time the *half* and *quarter-hunts* make a change together next the *whole-hunt*, a *bob* must then be made.

To ring 360. Every time the *half-hunt* maketh a change next the *whole-hunt* a *bob* must then be made, except when a *quarter-hunt* makes a change there with it, and then not. In the 180 and 360 2 and 4 may be the *half* and *quarter-hunts*, or others at pleasure. The two *extreams* in the 720 must be made according to the rule in the *Introduction*. The first *extream* may be made either

1	2	3	4	5	6	165324
2	1	4	3	0	5	156234
2	4	1	3	5	6	—
4	2	3	1	6	5	143265
2	4	3	6	1	5	134625
4	2	6	3	3	1	—
4	6	2	5	3	1	152643
6	4	5	2	1	3	—
4	6	5	1	2	3	125694
6	4	2	8	3	2	—
6	1	4	5	2	—	143652
1	6	5	4	3	2	134562
1	5	6	3	4	2	—
5	1	3	6	3	4	126543
5	3	1	6	4	2	—
3	5	6	1	2	4	162534
5	3	6	2	1	4	—
3	5	2	6	4	—	134356
3	2	5	4	6	1	134256
2	3	4	5	1	6	—
3	2	4	1	5	6	165243
2	3	1	4	6	5	156423
2	1	3	4	5	6	—
1	2	4	7	6	5	132495
1	2	3	4	5	6	—
1	4	2	3	5	6	123456

ther the first, second, or third time that the half and quarter-hunts make a change together in the second and third places at the leading of the whole-hunt ; and then the second *extrem* must be made the third time following that those two bells make a change there again , the *extremes* being there made in the fourth and fifth places, and the *singles* in the second and third places.

Every time the Treble leads, the *double* may as well be made on the four hind-bells, and the *bobs* to be made as before ; but the warning for them the same with *Colledge Doubles*.

Five Colledge Bobs.

In these five peals the Treble is the *whole-hunt*, and hath a like dodging course in all of them. The general method of the five peals is as follows : viz.

Colledge Bob the first. When the Treble moves down out of the fifth place, the two hind-bells dodg until it comes there again. Every bell leads twice, and then hunts up into the fourth place, unless the dodging course of the Treble hinders it, where it lieth twice and then moves down again ; except the bell that

that dodged with the Treble before, and also that which leads when the Treble lieth still behind, both which hunt directly up. When the Treble moves down from dodging in the third and fourth places, the bell that dodged there with it continues in those two places, lying twice together in each by turns until the Treble comes to dodg there with it again.

Colledge Bob the second. Every bell when it comes to lead makes a dodg before, then it lieth still one change, then it makes another dodg, and so moves up into the fourth place where it lieth still twice, and then down again; except it dodgeth with the Treble in the fourth place, and then it hunts up behind. But when the Treble moves down out of the third place, the two bells in the third and fourth places continue there until the Treble comes up there again, during which time the two hind-bells dodg.

Colledge Bob the third. When the Treble leaves leading, the two first bells dodg until it comes to lead again; except when the Treble dodgeth behind, for then the two first bells lie still. When the Treble leaves the two hind-bells, they lie still one change, dodg the next, and so by turns until the treble comes there again. The two middle bells always dodg until the Treble hindereth them.

Col.

Colledge Bob the
First.

123456	435216
214365	5c.
124356	163542
213465	bob.
231456	165324
324165	—
321456	123564
234165	bob.
243615	125346
426351	—
462315	143526
643251	134562
634521	—
365412	165432
356421	156423
534612	—
543162	124653
451326	142635
453162	—
541326	136245
514362	bob.
153426	132654
513462	—
154326	156234
145362	bob.
413526	152643
143562	—
415326	146253
451362	164235
543126	—
541362	132465
453126	123456

Colledge Bob the
Second.

123456	543216
214365	5c.
124356	153624
213465	bob
231645	135643
326154	—
231654	153462
326145	bob
362415	135426
634251	—
364215	153246
632451	152364
623541	—
265314	125634
625341	126543
263514	—
236154	162453
321645	164235
236145	—
321654	146325
312564	bob
135246	164352
315264	—
132546	146532
135264	bob
312546	164523
132564	—
315346	146253
351426	142635
534162	—
351462	124365
534126	123456

Colledge Bob the
Third.

123456	462513
214365	5c.
123465	165432
214356	bob
241365	156423
423156	—
241356	143526
423105	bob
243615	134562
426351	—
423615	152364
246351	153246
423651	—
246315	126543
243651	125634
426315	—
246135	164235
421653	162453
246153	—
421635	143652
412653	bob
146235	134625
412635	—
146253	165324
142635	bob
416253	156342
142653	—
416235	132546
461253	135264
642135	—
461235	124365
642153	123456

Colledge Bob the
Fourth.

123456	462513
214365	5c.
124356	165432
213465	bob
231456	156423
324165	—
321456	143526
234165	bob
243615	134562
426351	—
246315	152364
423651	153246
246351	—
423615	126543
243651	125634
426315	—
462135	164235
641253	162453
642135	—
461253	143652
416235	bob
146253	134625
412635	—
146253	165324
142635	bob
416253	156342
146235	—
412653	132546
421635	135264
246153	—
241635	124365
426153	123456

Colledge Bob the
Fifth.

123456	532514
214365	65.
124356	163542
213465	bob
231456	136524
324165	—
321456	163425
234165	bob
324615	136452
236451	—
234615	163254
326451	162345
234651	—
326415	126543
324651	125634
236415	—
326145	152436
231654	154263
236145	—
321654	145362
312645	bob
136254	154326
316245	—
132654	145623
136245	bob
312654	154632
132645	—
316254	145236
301245	142563
62154	—
631245	124365
362154	123456

Colledge Bob. the fourth.
When the Treble leaves the
two hind bells, they dodg
until it comes there again;
and then the two first bells
dodg until the Treble gives
way for the two hind bells
to dodg again, and then the
two first bells cease dodging.

Colledge Bob. the fifth.
When the Treble leaves the
two hind bells, they dodg
until it comes there again.
And when it leaves the two
first bells they lie still one
change, dodg the next, and
so by turns until it comes
down there again; during
which time the bells in the
third and fourth places dodg
except when the Treble hin-
dereth them.

By these methods each of
them will go 120 changes,
and by making of bobs they
will go 240, 360, or 720.
In the first of them the bell
in the second place lieth still
at the bob-changes, and in

M - the

the other four the bell in the fourth place always lieth still.

To ring 240. Every time the *half-hunt* dodgeth behind a *bob* must then be made, as in these peals here prickt; where, in the first peal the 4 is the *half-hunt*, and in the other four peals the 2 is the *half-hunt*.

To ring 360. Every time the *half* and *quarter-hunts* dodg together behind, a *bob* must then be made.

To ring 720. Every time the *half-hunt* dodgeth behind a *bob* must then be made, except when the *quarter-hunt* dodgeth there with it, and then not.

In the 360 or 720 of each peal the 2 may be the *half-hunt*, and 4 the *quarter-hunt*, or others at pleasure.

The Experiment.

Triples and Doubles. The Treble is the *whole-hunt*, but never hunteth up farther than the fourth place, for the four first bells go *Doubles and Singles*; and every time the Treble leads an *extream* is made in the third and fourth places, according to the common course of *doubles* and *singles* upon four bells; which course of *doubles* and *singles* must

must be continued, the two hind bells in the mean time dodging, until the making of the first *Parting change*, which will separate the two hind bells; and then the four first bells go the same course of *doubles* and *singles* again, the two hind bells dodging as before, until the making of the second *Parting change*, and so successively. The *Parting change* is a *double change* on the four middle bells, and made at the leading of the *Treble*. The first *Parting change* may be made either at the first second or third leading of the *Treble*, observing, that whatsoever bell in the first *Parting change* moves down to the *Treble*, when the *Treble* leads and that bell lieth next it again, the second *Parting change* must then be made. And whatsoever bell in the second *Parting change* moves down to the *Treble* when the *Treble* leads, and that bell lieth next it again, the third *Parting change* must then be made, and so successively. There being five *Parting changes* in the *Peal*, and as many *half-hunts*, each of the bells (the *Treble* excepted) taking that place one after another; and consequently, the five persons that ring them must call the *Parting changes* one after another as their turn comes, according to the aforesaid rule.

Cham.

Changes upon Seven Bells.

THE methods upon five may be prickt upon seven, observing but the true difference of proportion in the changes; that is *doubles* upon five bells must be *triples* upon seven; *doubles* and *singles* upon five must be *triples* and *doubles* upon seven, &c.

Plain Triples.

ALL the bells have a direct hunting course. All peals upon *six* bells wherein half the changes are *triples*, will go upon *seven* according to this method here prickt; two of the changes upon *six* being always made at the leadings of the Treble, the six hindmost bells making them: the first is a *triple* change brought in by the course of the bells, and the next must either be *double* or *single* according to the method of the changes upon *six*.

Dodge

Dodging Triples.

Triples and Doubles upon six may also go upon seven, according to this method here prickt, but in the same manner as the former.

1234567	2143576	2415367	4251376	4523167	5432617	4523671	5432761	4523716	5432176	5341267	3514276	3152467	1325476	1352746
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Colledge Bob Triples.

Every time the Treble leaves leading, the bell in the third place lieth still, whilst the four hind bells dodg; but otherwise all the bells have a direct hunting course as Plain Triples. By this method it will go seventy changes, and by making of bobs it will go 350. The rule for the bobs is this; when the Treble goeth to lead, if the half-hunt lying before gives it

1234567	6745312
2135476	7654132
2314567	7561423
3241657	5716243
3426175	5172634
4362715	1527364
4637251	1253746
6473521	

place, then a *bob* must be made at that change wherein the bell in the third place lieth still, and the four hind bells dodg ; so that at every *bob* the four hind bells make two dodges before they part. By making of two *extremes* it will go 700, and with four *extremes* it will go 1400. But by making of intervening *extremes* it will go 700 compleat *triples* without any *extremes*; 1400 with two *extremes*, and 2800 with four *extremes*. Any bell may be made a *half-burst*.

Colledge Bob, Triples: the second way.

1234567	4536271	7162534	7326145
2135476	5463721	1726354	3762415
2314567	5647312	1273645	3674251
3241576	6574132	2176354	
3425167	6751423	2713645	
4352617	7615243	7231654	

when the Treble leaves leading, the two hind bells dodg until Treble parts them; but in all other respects 'tis the same with the former, and the *bobs* made in the same manner, and by the same rule as in that peal, and it will go as many changes also as that.

Colledge Triples, dodging behind.

1234567	5346271	7165324	3675124
2143576	3564731	1756342	6357114
2415367	3657412	1753624	6332741
4251376	6375142	7135642	
4523167	6731524	7316524	
5432617	7613542	3761542	

Colledge Triples, dodging before and behind.

1234567	2436571	4126753	4726153
2143576	4263751	1462735	7462513
2415367	2467315	1467253	4765231
4251376	4276135	4176235	
2453167	2471653	4712653	
4235617	4217635	7421635	

Each of these two peals by the method here prickt will go *Eighty four* changes; and then when the Treble leads, and the *half-hunt* lieth next it, a *Parting* change being then made, they will go 420. And by making of *bobs* they will go 5040. 2 may be the *half-hunt*, or any other at pleasure. The *Parting*

change is a *double* on the four middlemost of the six hind bells.

'Tis plainly demonstrable, that the *Principle* upon *five* may go 420 *triples* upon *seven*, which is a twelfth part; 840, which is a sixth part; or 1260, which is a fourth part of the whole, and the utmost period of *triple* changes. And then by making of four *extrems* it may go 5040, the compleat peal.

Great variety of peals may be prickt upon *seven*: as *Triples*, *Triples and Doubles*, *Triples Doubles and Singles*; *Doubles*, *Doubles and Singles*, &c. But changes upon *seven* being seldom practised, I will therefore forbear to waste more paper in pricking down examples, and proceed to the changes on *eight*.

Changes upon Eight Bells.

Sixscores upon *five* bells are commonly rung upon *eight*, three bells lying behind. The most musical to lie behind are 2 1 8, 4 1 8, 1 4 8, 2 4 8, 3 4 8, 4 6 8, 6 4 8, 5 4 8; 8 6 4, 2 4 1, 3 2 1. and 1 3 5 to be laid behind, and then 1 and 3 to dodg throughout the peal. And also 1 8 4 to be laid behind, and to go the six changes thus, 8 1 4. 8 4 1.

4 8 1. 4 1. 8. 1 4 8. 1 8 4. 8 1 4. &c. and so on to the end of the sixscore. They may go the sixes either at whole or half-pulls. Peals upon six, as *Triples* and *Doubles*, &c. make exceeding good musick upon *Eight*. 4 8. 6 8. 4 1. or 1 8. lying behind. Or else *Triples* and *doubles* upon the six middle bells, the *Treble* leading, and the *Tenor* lying behind. And also *Triples* upon *seven*, the *Tenor* lying behind. But for such as have not yet attain'd the skill to ring these compleat peals, *Sett-changes* are very proper for them, being easie and rung with little difficulty.

Colledge Grounds.

THE grounds of these *sett-changes* are of two kinds. First, placing of the bells *Fifths*, or secondly *Thirds*. To place them *fifths*; the 4 must hunt up behind the 7, the 3 behind the 6, and the 2 behind the 5. Or else the 5 may hunt down under the 2, the 6 under 3, and the 7 under 4. Or otherwise, first a *single*, then a *double*, and then a *triple* change to be made on the middlemost bells, all which are to one effect; for then the bells will lie *fifths* thus, 1 5. 2 6. 3 7. 4 8. Here are four *Concords* to be chiefly regarded in the peal

peal. The first is 1.5. the second 2.6. the third 3.7. and the fourth is 4.8. These four *Concord*s may go the methods of any changes up on four bells; 1.5 being taken for the *Treble*, 2.6 for the *Second*, 3.7 for the *Third*, and 4.8 for the *Fourth*; and the *Concord*s to change places with each other at pleasure. Wherein 'tis observable, that the two notes of every *Concord* must constantly attend each other in their motion; that is, whensoever one of the two notes moves, the other must follow it. For example: admit they were to go the *twenty four* changes, and that 1.5 were to hunt up over 2.6, 3.7, and 4.8. first therefore it must move up over 2.6, wherein it makes four changes: for first, the 5 moves up over the 2 thus, 12563748, the 1 must follow it thus, 2156.37.48. Then the 3 moves up over 6. 2165.37.48. the 1 follows it again 26.15.37.48; here the two *Concord*s have made a change. In which manner also 1.5 must move up over 3.7 and 4.8. And in this manner are the *Concord*s to move and change places with each other throughout the peal. Or secondly, to place the bells *thirds*, the 6.4 and 2 must hunt up, or else the 3.5.7 down; or otherwise a *triple*, a *double*, and a *single* change to be made on on the middlemost bells; all which are to one and the same

same effect, for then the bells will lie *thirds* thus, 1.3.5.7.2.4.6.8. Here are also four *Concord*s principally to be regarded in the peal: the first is 1.3, the second 5.7, the third 2.4, and the fourth 6.8. These four *Concord*s may also go the methods of any changes upon four bells, 1.3 being taken for the *treble*, 3.7 for the *second*, 2.4 for the *third*, and 6.8 for the *fourth*, and they must move in the same manner as before I have shewed. By these *Grounds* great variety of excellent and Musical changes are to be rung. If they go the *twenty four*, then the peal will consist of four times that number, that is, *ninety six* changes. But they may go only the first eight changes of the *twenty four*, and then the peal will consist of *thirty two*. Or else the first eight changes of a *twenty four* doubles and *Singles*, which will consist of *forty eight* if the double changes of the *twenty four* are *singled*, otherwise but *thirty two* as before. Any *Concord* may be made a *hunt*, and to move either up or down at the beginning: so that these *Grounds* afford great diversity. In the ringing of these *Sett-changes* the notes will lie sometimes *fifths*, sometimes *thirds*, and sometimes *thirds* and *fifths*, and then 'tis pleasant Musick to *Clam* them, that is, the two notes of each *Concord* to strike together; and if

if they are *clam'd* true, the eight bells will strike as if they were but four, but with far greater harmony. They may *Clam* two or three bouts, and then strike open as many, and so alternately; or else they may *Clam* one pull, open the next, and so on. To reduce the notes of the *fifths* to their right places again at the conclusion of the peal, either 2 3 4 must hunt down, or else 7 6 5 up; or otherwise a *Triple double* and *single* change to be made on the middlemost bells, all which are to one effect, and will bring the bells round. To reduce the *thirds*, either move down 2 4 6 into their places, or else move up 7 5 3 into theirs; or otherwise make a *single*, *double*, and *triple* change on the middlemost bells; all which are to one effect, and will bring the bells again round.

The methods of all peals upon *six* bells may be prickt upon *eight*, observing but proportion in the changes, according to the difference in the number of bells, *viz.* *Triples* and *doubles* upon *six* must be *quadruples* and *triples* upon *eight*. *Doubles* upon *six* must be *Triples* upon *eight*, &c.

Bob Major.

Plain Quadruples and Triples. All the bells have a direct hunting course until the Treble leads, and then the six hindmost bells dodg. By this method it will go 112. And by making of *bobs* it will go 224, 336, or 672. The *bob* is a *triple* change at the leading of the Treble, wherein the bell in the 4th place lieth still.

To ring 224. Every time the *half-hunt* dodgeth behind, a *bob* must then be made.

To ring 336. Every time the *half* and *quarter-hunts* dodg together behind, a *bob* must then be made,

To ring 672. Every time the *half-hunt* dodgeth behind, a *bob* must then be made, except when the *quarter-hunt* dodgeth there with it, and then not. The 2 may be the *half-hunt*, and 4 the *quarter-hunt*, or others at pleasure.

By making of two *extreams* it will go 1344, and with four *extreams* it will go 2688.

All

1	2	3	4	5	6	7	8
2	1	4	3	6	5	8	7
4	2	6	3	1	5	7	8
6	4	8	5	2	3	1	7
8	6	7	4	1	3	5	2
7	8	5	6	3	4	1	2
5	7	2	8	6	4	1	3
3	5	4	1	2	8	7	6
1	3	6	8	5	7	4	2

All peals upon *six* bells wherein half the changes are *triples*, will go upon *eight* according to the method before prickt, but after this manner. If it is a peal upon *six*; which consists of 360 or 720 changes, then in the ringing of it upon *eight* there must be five *hunts*. The *Treble* may be the first *hunt*, & the second &c. Now the method of the peal must go on according to that before prickt until the *Treble* leads, and the 2 lie next it, and then two of the changes upon *six* are always made, the six hind bells making them: the first is always a *triple* change brought in by the course of the bells thus, 12436587, and the second either *double* or *single* according to the method upon *six*; and the *third* *fourth* and *fifth* *Hunts* in *eight*, are the *whole* *half* and *quarter-hunts* in the changes upon *six*. By this method it will go 40320 compleat, but then every 112th change will be a *double*, and sometimes *single* in some peals. The bells may be brought round at 672 in some peals, but in others not till 1344.

Colledge

Colledge Bob-Major.

Quadruples and Triples. The first hath single dodging behind; the second single dodging before and behind; the third

<i>The first.</i>	<i>The second.</i>	<i>The third.</i>	<i>The fourth.</i>
12345678	12345678	12345678	12345678
21436587	21436587	21436587	21436587
24163578	24163578	24135678	24135678
42615387	42615387	42316587	42316587
46251378	24651378	43261578	24361578
64523187	42563187	34625187	42635187
65432817	24536817	36452817	24365817
56348271	42358671	63548271	42638571
53684721	24385761	65384721	24368751
35867412	42837516	56837412	42637815
38576142	24873156	58673142	24367185
8751624	42781365	85761324	42631758
87315642	24718356	87516342	24613785
78136524	42173865	78153624	42167358
71863542	41237856	71856342	41263785
17685384	14328765	17583624	14627358
16758342	13482756	15786342	16423785

double dodging behind; and the fourth double dodging before and behind. It may also be prickt a *fifth* way, *viz.* with single dodging before, and double dodging behind. And likewise a *sixth* way, *viz.* with doubled dodg-

dodging before, and single dodging behind. The dodging is without intermission except when Treble hindreth, and also betwixt two bells until Treble parts them. By this method each of them will go 112, and by making of *bobs* they will go 224, 336, or 672. The *bobs* are *triple* changes at the leadings of the Treble; in the *first* *second* and *sixth* the bell in the *4th* place lieth still at the *bobs*, and in the *third* *fourth* and *fifth* the bell in the *2d* place lieth still. The warning for the *bobs* is the same with that in *Bob-major* next before. And the *extremis* made as in that peal, 2 may be the *half* and 4 the *quarter*-*unt* in the four *first*, or others at pleasure.

Colledge Triples; dodging before and behind.

BY this method it 12345678 | 42587613
 will go 112, and 21435687 | 24578163
 by making of *bobs* it will go 224, 336, or 672. | 24513687 | 24517863
 42513687 | 24531678 | 42157863
 The *bob* is a *triple-change* 42536187 | 41275863
 at the leadings of the 24563817 | 14725830
 Treble, wherein the bell 42568371 | 17452863
 in the *4th* place lieth 24586731 |
 still. The warning for the *bobs* is the same
 with

with that in Bob-major, and the extremes also the same as in that peal. The 2 may be the half-hunt, and 4 the quarter-hunt, or others at pleasure.

The Wild-Goose Chase.

Triples. The fourth bell must first hunt up into the 7th place, and then the 4th and 8th continually dodg behind throughout the peal, except when the Treble hindreth them. The bell that moves up into the 6th place when the Treble moves down from thence, lieth still there until the Treble displacest it; during which time the two hind bells dodg, and the five first go a perfect hunting course. And also when the Treble moves up out of the 6th place, the five first bells go hunting course until it comes down there again. By this method it will go eighty changes, and by making of bobs it will go 160, 240, or 480. The 1 2 3 4 5 6 7 8
2 1 5 3 8 7 8 4
2 3 1 8 9 1 4 8
5 2 6 1 3 7 8 4
5 6 2 3 1 7 4 8
6 5 3 2 7 1 8 4
6 3 5 7 2 8 4 4
3 6 7 5 1 8 4 1
3 6 2 5 4 8 1
7 3 2 6 5 4 1 8
7 2 3 9 6 1 4 8
2 7 5 3 1 6 8 4
2 5 7 1 3 6 4 8
5 2 1 7 3 6 8 4
5 1 2 3 7 6 4 8 1
1 3 2 7 8 9 4 3
1 3 5 7 1 8 4 8 1
3 1 7 5 2 6 8 4 3
3 7 4 2 5 8 4 8 3
7 3 2 1 5 6 8 4 1
7 2 3 5 1 6 4 8 1

bob is a *triple change* at the leading of the *Treble*, wherein the bell in the *4th* place lieth still.

To ring 160. Every time the *half-hunt* maketh a change in the *2d* and *3d* places, a *bob* must at the same time be made.

To ring 240. Every time the *half* and *quarter-hunts* make a change together in the *second* and *third* places, a *bob* must then be made.

To ring 480. Every time the *half-hunt* maketh a change in the *second* and *third* place, a *bob* must then be made, except when the *quarter-hunt* makes a change there with it, and then not. The *2* may be the *half-hunt*, and *6* the *quarter-hunt*, or others at pleasure.

College Triples, dodging behind.

THE method of ringing this peal is the same in all respects with that next before, with this only difference. Every time the *whole-hunt* leads, the *triple change* is here made on the six middle bells, which parts the two hind-bells, and so introduceth them by degrees into the body of the peal. By this method it will go 112, and by making of *bobs* it will go 224, 336, or 672. The *bob* is a

triple

triple change at the leading of the Treble, wherein the bell in the 6th place lieth still. The warning for the *bobs* in the 224 is the same with that in the 160 next before. In the 336 'tis the same with that in the 240 next before. And in the 672 'tis the same with that in the 480 next before. 2 may be the *half-hunt* and 5 the *quarter-hunt*, or others at pleasure.

The Grand Experiment.

Quartuples and Triples. The Treble is the *whole-hunt*, but never hunteth up farther than the sixth place; for the six first bells go *triples* and *doubles*; it matters not of what sort, provided that the *double* changes at the leadings of the Treble are always made in the four hindmost of the six bells; which course of *triples* and *doubles* must be continued, the two hindmost of the eight bells in the mean time dodging until the first *Parting* change is made, which will separate the two hindmost bells; and then the six first bells go

the same course of *triples* and *doubles* again, the two hindmost bells in the mean time dodging as before, until the second *Parting* change is made, and so successively. The *Parting* change is a *triple* change on the six middle bells, and made at the leadings of the *whole-bum*. The first *Parting* change may be made either at the first second third fourth or fifth leading of the Treble; observing, that whatsoever bell in the first *Parting* change moves down to the Treble, when the Treble leads and that bell lieth next it again, the second *Parting* change must then be made. And again, whatsoever bell in the second *Parting* change moves down to the Treble, when the Treble leads and that bell lieth next it again, the third *Parting* change must then be made, and so successively; there being seven *Parting* changes in the peal, and as many *half-bums*, each of the seven bells taking that place one after another. So that the seven persons that ring the 2d, 3d, 4th, 5th, 6th, and 7th bells, must call the *Parting* changes one after another, according as the aforesaid rule directs them: or else he that rings the Treble may do it, but not so well as the rest. To ring it with such peals upon six bells which consist of single courses, it will go 420; with double courses 840. This peal may also be rung *re-split*, that

that is, the six first bells to go *doubles*, the two hind bells in the mean time dodging, and the *Parting* changes to be made as before. But in ringing it with such Peals of *Triples* and *Doubles*, or else *Doubles* upon six bells, where the *double* change at every leading of the *Treble* is made in the 2d 3d 5th and 6th places, there, whatsoever two bells lie next the *Treble* at the first *Parting* change, the same two bells will lie next it at every *Parting* change, which will be a rule for calling them, there being only five *Parting* changes in it, which are *triples* as before. The first *Parting* change may also here be made either the first second third fourth or fifth time the *Treble* leads. If it is rung with peals upon six bells, consisting of single Courses, it will then go 300, with double Courses 600. This peal may also be rung by *Concatenating* of divers kinds of methods. For as the peal consists of several parts, *viz.* from one *Parting* change to the next, being accounted a compleat part; each part may be rung by a different method from the rest. For any peals upon six bells, whether *doubles*, or *triples* and *doubles*, consisting either of single or double Courses, may indifferently be rung together in this peal, succeeding each other in the several parts of it, and at every *Parting* change a new

method to begin. Or else any two of them to succeed each other alternately throughout the parts of the peal, or more or less at pleasure. But still observing, that all that are rung together in one peal must be such, where the *doubles* at the leadings of the Treble are made on the four hindmost of the six bells; or else all of them such, where the *doubles* at the leadings of the Treble are made in the second and third, and the fifth and sixth places. If they are of the first kind, then there will be seven *Parting* changes in the peal, and as many *half-hunts*; and the *half-hunts* must successively call the *Parting* changes as before I have shewed: if of the later kind, then but five *Parting* changes, which must be call'd by the same rule as before I have shewed in ringing it with one peal of this kind. And also observing, if the first *Parting* change is made at the first second third or fourth leading of the Treble, then whatsoever method it goes at first, it must also go the same again after the last *Parting* change is made. But in ringing it with peals of the first kind, the second being made the first *half-hunt*, and to call the first *Parting* change; and with peals of the later, the 3d likewise: then the last *Parting* change in either of them will conclude the peal.

This

This peal may go the method of the *Experiment upon six bells*, page 162, that is, the four first bells to go the *Twenty four Doubles and Singles* as in that peal; and the four hindmost bells in the mean time to dodg double. The *Parting* changes are *triples* on the middle bells, and the same rules observed in making and calling them, as in that peal: but here are seven of them in this, and 168 changes.

The *Experiment upon six* may also be rung *Comprehensively* herein. The six first bells to go that compleat peal, the two hindmost of the eight bells in the mean time dodging; and every time the *3d* bell comes to call the *Parting* change on six, then instead of it a *Grand* change must be made, that is, a *triple* on the six middle bells: and then the six first bells to go the compleat peal again, the two hindmost bells in the mean time dodging as before, untill the third bell calls another *Grand* change, and so successively; there being three of them in the peal, and 360 changes. If the bells are placed 23567148 at the beginning, the 4.8 will dodg behind the first *sixscore* of it, 4.1 the second, and 1.8 the third, and then the 5th may call the *Grand* changes in the place of the *3d*; or any other three bells may be laid behind at first, for the

ake of Musical dodging. The first *Grand* change may be made either at the first second third fourth or fifth *Parting* change, obser-
ving, that whatsoeuer bell at the first *Grand* change should then in course have call'd a *Parting* change, every time that bell comes to call a *Parting* change, it must call a *Grand* change in the place of it: or else any one of the six first bells (the *whole-hunt* excepted) may be appointed beforehand to attend the calling of the *Grand* changes, observing, that every time that bell comes to call a *Parting* change, a *Grand* change must be call'd in the place of it.

Imperial Bob.

Quadruples and Triples. The Treble hath a dodging course. The two first and two last bells always dodg until the Treble hindreth them, and in the mean time the two next bells to those dodging bells do lie still one change, dodg the next, and so by turns until the Treble also hindreth them. And the two bells in the fifth and sixth places whilst the Treble is behind, and those in the 3d and 4th places when 'tis before dodg, until Treble likewise hindreth them. By this

method it will go 224, and by making of
two it will go 448, 672, or 1344. The *bob*
is a triple change at the leading of the Treble;
wherein the bell in the fourth place lieth
still.

12345678	42361875	16847253	14283675
21436587	24368157	16482735	— —
12346578	42631865	— —	18645273
21435687	24613857	18765432	18462537
24136578	42168375	bob	— —
42315687	24618357	17864523	16587432
24135678	42163875	— —	bob
42316587	41268357	16573824	15684723
24361578	14623875	bob	— —
42635187	41263857	15678342	18753624
24631578	14628375	— —	bob
42365187	14263857	17352648	17856342
24635817	41628375	17536284	— —
42368571	14268357	— —	15372846
24365817	41623875	13274586	15738264
42638571	46128357	13725468	— —
24365871	64213875	— —	13254768
42638517	46123857	12438765	13327486
24635871	64218375	12347856	— —
42368517	46281357	— —	12436587
24638157	656	14826357	12345678

To ring 448. Every time the *half-hunt* dodgeth behind a *bob* must then be made, as in this here prickt, where 2 is the *half-hunt*.

To ring 672. Every time the *half* and *quarter-hunts* dodg together behind, a *bob* must then be made.

To

To ring 1344. Every time the *half-hunt* dodgeth behind a *bob* must then be made, except when the *quarter-hunt* dodgeth there with it, and then not. The 2 and 4 may be the *half* and *quarter-hunts*, others at pleasure.

NOTTINGHAM Peals.

Nottingham Mixt Peal.

I. 6. 2.

THE Changes are plain *Trebles* and *Doubles* until the *Treble* leads, and then a *single* change is always made. The Peal called *Old Doubles and Singles* upon five bells is the ground of this Peal, every *single* in this peal being the *single* in that. For as in that peal the *whole-hunt* is one of the two bells that make every *single*; so likewise in this, the 6 being the *half-hunt*, is one of the two bells that makes every *single* change herein, except when it lieth next the *whole-hunt*, and then the *single* is behind; but when 2 lieth

1	23456
2	214365
3	241635
4	426153
5	462513
6	645231
7	654321
8	563412
9	536142
10	351624
11	315264
12	132546
13	132564

2 lieth also next the 6, then *extream* in the fourth and fifth places.

Nottingham Trebles and Doubles.

I. 2. 3.

THE ordinary course is to move directly, except when the *whole-hunt* passes either out of or into the *second's* place, and then constantly dodg behind. There are single and double *bobs*; the *bob* is a *double change* at the leading of the *Treble*, wherein the bell in the 4th place lieth still. When the third *hunt* dodges behind, the second *hunt* then leading, is a warning for the single *bob* to be made at the next leading of the *Treble*. And when the second and third *hunts* dodg together behind, is a warning for the double *bob* to be made at the two next leadings of the *Treble*. The two *extreams* in the 720 must be made according to the general rule in the *Introduction*, p. 90.

Not-

Nottingham *Single Bob.*

I. 5. 2.

ONE time the Treble hunts quite up, the next time only up into the fourth place, and so by turns, as in the example here prickt. The bells observe the course of the Treble, and also dodg it being before; and once in 120 changes *bob*, when that bell which is nominated for the second *hunt* lying behind twice, meets with the third *hunt* when the first *hunt* is going to lead. The second and third *hunts* are both one.

The first *single*,

124365

124356

The second *single*.

123465

123456

Nottingham *Bob.*

I and 2.

THE Treble hath a dodging course, and every time it leads, the *double* is on the four

four middle hells, except the *bobs* which are made in the *2d* and *3d*, and the *5th* and *6th* places. The *bobs* are single and double. When the *whole-hunt* leads and the *half-hunt* lieth behind, is a warning for a double *bob* to be made at the two next leadings of the *Treble*, there being but three changes betwixt the two *bobs*. And when the *half-hunt* lieth in the first and second places for twenty changes together, is a warning for a single *bob* to be made the second time the *Treble* leads. The *extremes* must be made according to the general rule in the *Introduction*, page 90.

123456	523614	112635	562314	162453
214365	526341	146253	653241	126543
241635	253614	<i>bob</i>	635421	215634
426153	235164	164235	364512	316543
421635	321546	612453	365421	125634
246153	325164	621543	634512	152304
264513	231546	265134	643152	513246
625431	213456	261542	461325	
624513	124365	625134	463152	
265431	142635	652314	641325	
256341	416253	563241	614235	

Red-

T

Redding Bob.

THE Treble hath a dodging course, and when it moves up out of the 2d place the two first bells dodg until it comes there again; and when it moves down out of the 5th place, the two hind bells dodg until it comes there again, except only whilst it dodgeth in the 3d and 4th places, and then the two hind bells lie still. When the Treble lieth behind the *double* is on the four first bells; and when it leadeth on the four last. By this method it will go 120, and by making of *bobs* it will go 240, 360, or 720. At the *bobs* the bell in the 4th place lieth still. The rule of calling the *bobs* is the same with that in the *Colledge Bobs*, page 162.

Redding Bob according to the Cambridg way.

This is the same with the former, excepting only the *double* changes which are made

1	2	3	4	5	6
1	2	3	4	5	6
2	1	3	4	5	6
2	1	3	4	5	6
3	1	2	4	5	6
3	1	2	4	5	6
3	2	1	4	5	6
3	2	1	4	5	6
3	2	4	1	5	6
3	2	4	1	5	6
3	2	4	5	1	6
3	2	4	5	1	6
3	2	4	5	6	1
3	2	4	5	6	1

made when the Treble dodgeth in the 3d and 4th places, both in hunting up and down; which are here made on the four hind bells, whereas in that they were made on the four first bells: so that here the two hind bells dodg without intermission until the Treble hindreth them. This will also go 240, 360, and 720, and the *bobs* made by the same rule as the former.

<u>123456</u>
214365
124356
<u>213465</u>
231456
324165
<u>321456</u>
231654
236145
321654
<u>312645</u>
136254
316245
132654
<u>136245</u>

Fif-

Fifteen OXFORD Peals.

D oubles and singles.	<u>Every</u>	<u>bell leads</u>	<u>four times.</u>	<u>12345</u>	<u>35142</u>	<u>12453</u>	<u>15243</u>
The Treble hath a dodging course; and is one of the two bells which makes <u>every single change</u> except when it leads, and then 'tis made in the 3d and 4th places; but when the 2d lieth next it, an <i>extream</i> behind.				21435	31542	—	15423
				24135	35124	14235	14532
				21453	31524	14325	14352
				24153	13254	13452	—
				42513	13524	13542	13425
				42531	15342	—	13245
				45214	15432	15324	12354
				45231	—	15234	Ext.
				54321	14523	12543	12345
				54312	14253	Ext.	
				53421	12435	12534	
				53412	Ext.	—	

Camelion. 1 and 2.

Every time the Treble hunts up and down, it makes a *single* in the third and fourth

4th places, and when it leads the *single* is there also; but when 2 lies next it, then an *extream* behind. Every bell except the Treble leads four times.

1	2	3	4	5	4	5	2	1
2	1	3	5	4	4	5	1	2
2	3	1	4	5	4	1	5	3
2	3	4	1	5	1	4	5	2
2	4	3	5	1	1	4	2	5
	4	2	5	3				

Medley. I and 5.

Doubles and Singles. The Treble leads four times, lieth behind as many, and twice in every other place. Every other bell leads four times. Every *single* is made behind, except when the Treble is either in the fourth or fifth places, and then in the second and third places. Every time the Treble goeth to lead and leaves leading, the *double* is on the two first and two last bells, except when the Treble goeth to lead if the 5th gives it place, and then the *double* is made on the four first bells.

1	2	3	4	5	4	1	3	2
2	1	3	5	4	4	5	1	2
2	1	3	5	1	1	4	3	2
2	3	1	4	5	1	4	2	3
2	3	4	1	5	1	5	2	4
2	4	3	5	1	1	4	2	5
	4	2	5	3				



Oxford Paradox. 1 and 5.

Doubles and singles. Every bell leads four times, and lieth behind as many. Every *single* is made in the third and fourth places until the Treble leads, and then in the second and third places: but when the Treble leads and the fifth lieth behind, then the *extream* in the third and fourth places.

Halliwell. 1 and 2.

TReble leads four times, lies behind as many, and twice in every other place. When it leaves the two hind bells, they dodg until it comes there again, except when it leads and 2 lies next it, for then an *extream* is made in the third and fourth places.

12345	54312
21435	54132
21345	45312
23154	45132
23514	44152
32154	4123
32514	14523
35241	15423
35421	14532
53241	15432
53421	

12345	54312
21354	45312
21345	54132
23154	54123
23145	51432
32415	51423
23415	15432
32451	15423
34251	14532
43521	14523
45321	

Oxford Sixscore.

THE Treble hath a direct hunting course, as in plain changes; and the changes are all *single* except when the Treble lieth behind, and then a *double* is made on the four first bells; and when it leads, the *single* is in the third and fourth places, but when 2 lieth next it an *extrem* behind.

Fortune. I and 2,

Doubles. The Treble is a perfect hunt, and when it leaves the two hind bells they dodg until it comes there again. Every bell leads twice, and then hunts directly up, unless the aforesaid dodging hindreth them. Every time the Treble leads, a *single* is made behind, except when 2 lieth next it, and then an *extrem* in the third and fourth places.

12345	32514
21345	32154
23145	31254
23415	13254
23451	13524
32541	
12345	13254
21354	
23145	14523
32415	14532
34251	
43521	12354
45312	Ext.
54132	12534
51423	
15432	14352
15423	14325
13245	

Oxford Single Bob.

Triples, Doubles, and Singles.

I. 2. and 3.

THE Treble hath a direct hunting course; and when it leaves the two hind bells they dodge until it comes there again. Every bell leads twice, and then hunts directly up, unless the aforesaid dodging hindreth them. When the Treble leads, the *double* is on the four hind bells. By this method it will go *sixty* changes, and by making of *singles* it will go 120, 240, 360, or 720. The *singles* in the 120, 240, and 720, must be made by the same method with those in *Old Triples and Doubles*, page 109. And to ring 360, every time the 1. 2 lie together before, the *single* must be made behind; and when 1. 2. 3 lie together there, then the *single* in the fourth and fifth places.

123456
214365
241356
423165
432615
346251
364521
635412
653142
561324
516342
153624
156342
513624
531642
356124
365214

then the

Ox.

Oxford Double Bob.

Triples, Doubles, and Singles.

When the Treble leaves the two first bells, they dodg until it comes there again; but in all other respects 'tis the same with the former. And the singles in the 120, 240, 360, and 720, to be made as in that Peal.

123456	246135
214365	431653
241356	412635
423165	146253
243615	142635
426351	416753
243651	461235
426315	

Oxford Single Bob.

THE method of this Peal is the same in all respects with Oxford Single Bob, Triples Doubles and Singles, excepting the bobs in this peal, which are made in stead of the singles in that. By making of bobs it will go 180 or 360. The bob is a double change at the leading of the Treble, wherein the bell in the fourth place lieth still.

To ring 180, there must be a whole and half-hunt; and when the whole-hunt is before and the half-hunt behind, the next change is to be a bob.

To ring 360, there must be a *whole*, *half*, and *quarter-hunt*, viz.

First, when the *whole-hunt* comes to lead, and the *half-hunt* to fall behind, the next change is a *bob*: and

Secondly, when the *whole-hunt* leads before the *quarter-hunt*, and the *half-hunt* is in the fifth place, the next change is also a *bob*.

The 1 and 5 may be the *whole* and *half-hunts* in the 180, and 1.5.3 the *whole*, *half*, and *quarter-hunts* in the 360, or others at pleasure.

Oxford Double Bob.

THE method of this peal is the same in all respects with *Oxford double Bob* before, excepting the *bobs* in this peal, which are made instead of the *singles* in that. The *bobs* are here made in the same manner, and call'd by the same rule in the 180 and 360, as in *Oxford single Bob* next before; and the two *extreams* in the 720, both in this and the last peal, must be made according to the general rule in the *Introduction*.

Ox-

Oxford *Triple Bob.*

THE Treble is the *whole-hunt*, and hath a dodging course. When it leaves the two hind bells, they dodg until it leads, and then a *double* is made on the four middle bells, which parts the two hind bclls; but then the two hind bells dodg again until the Treble displaceth them. Every bell leads twice (except when the Treble dodgeth there) and as they hunt up and down do make a dodg in the third and 4th places. When the Treble moves up from dodging before, the bell that dodged there with it continues in the first and 2^d places, lying twice together in each, until the Treble comes down to dodg there with it again. By this method it will go 120, and by making of *bobs* it will go 360. At the *bobs* the bell in the fourth place lieth still. The warning for them is this, When the *half-hunt* leads, and the Treble moves down, and dodgeth there with it,

123456
214365
124356
213465
231456
324165
321456
234165
243615
426351
423615
246351
264531
625413
624531
265413
256143
521634
526143
251634
215643
126534
216543
125634
152364
513246
153264
512346
521364

a *bob* must then be made at that leading of the Treble. The 3 may be the *half-hunt*, or any other.

Oxford Triple Bob, the second way.

This peal is in all respects the same with that next before, except the *double change* which is made when the Treble moves up out of the second place, and also down into that place again, which is here made on the four middle bells, and consequently parts the two hind bells, which in the former peal continued dodging together. This will also go 360, the *bobs* being made in the same manner, and also the warning for them the same, as in the former peal.

Oxford Riddle, or the Hermophrodite.

Treble is the *whole-hunt*; whilst 'tis hunting up the two last bells dodg, and whilst 'tis

'tis hunting down the two first. Every time it leads and lieth behind, the *double* is made on the four farthest bells from it. Every bell leads twice and lieth behind twice, except the dodging hinder. By this method it will go *sixty* changes *triples* and *doubles*, and then by making of *singles* as in *Old triples* and *doubles*, it will go 120, 240, or 720.

My Lord. 144.

Doubles. Treble is a perfect Hunt. Every bell leads twice, and then moves up into the third place where it lieth twice, and then moves down again except the motion of the Treble hindreth. When the Treble goeth to lead and leaves leading, the *double* is on the two first and two last bells; and when it leadeth, 'tis on the four middle bells. But when it leadeth, and the 6 lieth behind, then a *single* in the third and fourth places.

If a *double* be made on the four hind bells, at every third leading of the

<u>123456</u>	341652
214365	314562
241356	135426
423165	134562
432615	315426
346251	351462
432651	534126
346215	513216
436125	
<u>123456</u>	
213465	
231456	
324156	
342516	
432561	
423651	
243615	
234165	
321465	
312456	
132465	
<u>123645</u>	

the Treble it will go 180 compleat *doublers*; and then by making of two *singles* it will go 360, or with four *singles* 720:

Seventeen Peals composed at CAMBRIDGE, by Mr. S.S.

My Honey. I and 2.

In this peal there is a *whole-hunt* and an *half-hunt*. The *whole-hunt* meth always four times before, and four times behind, and twice in every other place. The two hindmost bells always dodg 'till the *whole-hunt* hindreth, except when the *whole-hunt* is before, at which time there are four changes made of a four and twenty *doubles* and *singles*; the first of which is a double change brought in by the

12345	31254	54321
21354	31245	45231
21345	13254	54231
23154	—	45213
23145	13524	54213
32415	15342	45123
23415	—	45132
32451	15432	41523
23451	51423	41532
32541	51432	14523
23541	54123	—
32514	54132	14253
23514	45312	12435
32154	54312	—
32145	45321	12453

the course of the bells (as in the following
peal appeareth) 13254 ; the second is a *single*
in the third and fourth places (13524) ; the
third is a *double* on the four last (15342),
and the fourth a *single* again in the third and
fourth places (15432), except when the
half-hunt is with the *whole-hunt* before, then
it is to be an *extream* behind. When the
whole-hunt leaves the *third*'s place hunting up,
the two formost bells dodg till it returns into
the same place again.

The whirligigge. 1 and 5.

221 **I**N this peal, first the bells dodg behind (and
221 not before) till the *whole-hunt* hindreth
223 them ; and the next course they dodg in like
223 manner before (and not behind) till the *whole-*
223 *hunt* hindreth them ; and so by turns through-
223 out the whole peal. When the *whole-hunt* is be-
223 fore, if the bells were dodging behind before
223 it came to lead, single behind ; if they were
223 dodging before, single in *second*'s and *third*'s
223 place : and when the *whole-hunt* leads, and
223 the *half-hunt* is in *Tenor*'s place, there is always
223 an *extream* to be made in 3^d and 4th place,
223 which is every fourth time the *whole-hunt*
223 lands.

21354	51243	31245	41352
23145	52134	32154	43125
32415	25314	23514	34215
34251	52341	25341	43251
43521	25431	52431	34521
45312	52413	54213	43512
54132	25143	45123	34152
51423	21534	41532	31425
15432	12354	14523	13245
15423	13254	14532	13425

Jack-on-both-sides. 1 and 5.

IN this peal the bells always dodg both before and behind, till the whole-hunt hindreth them; except when both the Hunt

21354	45132	52143	32514	23451	53421
23145	54312	25413	23541	32541	35412
32415	45321	52431	32451	23514	53142
34251	54231	25341	34215	32154	51324
43521	45213	52314	43125	31245	15234
34512	54123	25134	41352	13254	—
43152	51432	21543	14325	13524	15243
41325	15342	12534	14235	31542	51423
14352	—	12354	41253	35124	—
14532	15324	21345	42135	53214	—
41523	51234	23154	24315	35241	—

are together either before or behind; for then

then the two farthest bells from the Hunts do leave dodging for the next change onely which is always a *double* made by the two Hunts and the two next bells to them. The *singles* and *extrems* are made as in the *Old Doubles*.

Winwick Doubles. 1 and 3.

IN this peal, first, the two hindmost bells dodg till the *whole-hunt* hindreth them, till the first *single* is made: and then the two for-
most bells dodg 'till the *whole-hunt* hindreth them, until there be made another *single*, and so they continually dodg successively throughout the whole peal. There are six *hind-singles* which are made in the same manner as *front-singles*. *St. Dunstan's Doubles*, page 127.

21	2 1 3 5 4	4 1 5 3 2	3 1 2 5 4	4 1 5 2 3
12	2 3 1 4 5	4 5 1 2 3	3 2 1 4 5	4 5 1 3 2
43	3 2 4 1 5	5 4 2 1 3	2 3 4 1 5	5 4 3 1 2
24	3 4 2 5 1	5 2 4 3 1	3 2 4 5 1	4 5 3 2 1
34	4 3 5 2 1	2 5 3 4 1	2 3 5 4 1	5 4 2 3 1
13	4 5 3 1 2	2 3 5 1 4	3 2 5 1 4	4 5 2 1 3
33	5 4 1 3 2	3 2 1 5 4	2 3 1 5 4	5 4 1 2 3
13	5 1 4 2 3	3 1 2 4 5	2 1 3 4 5	5 1 4 3 2
33	1 5 4 3 2	1 3 2 5 4	1 2 4 3 5	1 5 3 4 2
for	1 4 5 2 3	— —	1 4 3 5 3	— —
on		1 3 5 2 4		1 5 3 2 4

None-

Non-such. 1 and 2.

IN this peal the bells always dodg both behind and before till the *whole-hunt* hindreth them, except when both the Hunts are together either hehind or before: for then the bells omit dodging for the next change as in *Jack-on-both-sides*. There are four *gales* which are all made in the 3d and 4th places every third time that the *whole-hunt* leads.

21435	25134	32415	53214	54231	34521
24153	52314	23451	35241	45321	35411
42513	25341	32541	53421	43512	53141
24531	52431	23514	54312	34152	51324
42351	25413	32154	45132	31425	15341
24315	52143	31245	41523	13452	—
42195	51234	13254	14532	14325	15432
41253	15243	—	15423	41352	
14235	12534	13524	51432	43125	
12453	21354	31542	54123	34215	
21543	23145	35124	45213	43251	

Cambridg Delight. 2 and 4.

IN this peal the two hindmost bells always dodg till the *whole-hunt* hindres them. When the *whole-hunt* leaves the *thirds* place

hunt-

hunting up, the two foremost bells dodg till the *half-hunt* hinders them, whose course is the same with the course of the *half-hunt* in *Grandsire*. There are two *singles* which are made by the same rule as in *Grandsire*.

13254	15243	14235	45231
31524	12534	41325	42513
13542	21543	43152	24531
31452	25134	34512	25413
34125	52143	35421	52431
43215	51234	53241	54213
42351	15324	52314	45123
24315	51342	25341	41532
23451	15432	23514	14352
32415	14523	32541	13425
34251	41253	35214	31245
43521	42135	53124	32154
45312	24153	35142	23145
54132	21435	53412	—
51423	12453	54321	23154

Cambridg Delight, another way.

1 and 4.

In this peal the two hindmost bells always dodg till the *whole-hunt* hinders, as in the former Peal. When the *half-hunt* leaves the place hunting up, the two foremost bells dodg

dodg till the *whole-hunt* hinders. It differeth from the former peal in this; That whereas in that the bells always begin to dodg before when the *whole-hunt* leaves *third's* place, and are parted by the *half-hunt*; in this they begin to dodg before when the *half-hunt* leaves the *third's* place, and are parted as well before as behind by the *whole-hunt*. It differeth also, in that the *half-hunt* in this peal always bobbeth behind on the contrary stroke to what it doth in the former peal; there are two *singles*, which are made as in the former peal.

213545123431524
 231455214335142
 324152541353412
 342512453154321
 435214235145231
 453124321542513
 541323412524153
 514233145221435
 154321342512453
 145231435214235
 415324132541253
 451234315242135
 542133451224315
 524313542123451
 253415324132541
 523143521423514
 251345312432154
 215435134231245
 125341532413254
 152431354213245

The Dream, upon five bells. 1 and 2.

IN this peal the two hindmost bells always dodg till the *whole-hunt* hinders, except when the two Hunts are together before. Or it may be rang by making the two foremost bells

bells dodg always, except the Hunts be together behind. There are six single changes which are all behind every other time the *whole-hunt* leads, the *half-hunt* at every *single* lying either in the 2d or 3ds places.

21435	51342	41235	53142
24153	53124	42153	35412
42513	35214	24513	34521
45231	32541	25431	43251
54321	23451	52341	42315
53412	24315	53214	24135
35142	42135	35124	21453
31524	41253	31542	12543
13542	14235	13524	—
15324	—	15342	13534
14253	51324	—	&c.

The Contention upon five bells.

I and 2.

In this peal the two hindmost bells dodg as in the former peal till the Hunts are together before for twenty changes; and then for the next twenty changes the two formost bells dodg, except the Hunts are together behind. There are six *singles* which are made as in the former peal.

21435	51342	41523	41235
24153	53124	45132	42153
42513	35214	54312	24513
45231	32541	53421	42531
54321	23451	35241	24351
53412	24315	53214	42315
35142	42135	35124	24135
31524	41253	31542	21453
13542	14235	13452	12543
15324	—	14325	—
	14253		12534
			Sc.

The Cheat. I and 3.

IN this peal the two hindmost bells always dodg 'till the *whole-hunt* hinders, and the two foremost bells dodg 'till either the *whole* or *half-hunt* hinders. Or on the contrary, the two foremost bells may dodg 'till the *whole-hunt* hinder, and the two hindmost 'till either the *whole-hunt* or *half-hunt* hinder. Or it may be rang a third way, by joining both the courses together, ringing twenty changes of it one way, and the next twenty changes the other way throughout the peal. There are six *singles* which are all made behind, every second time the *whole-hunt* leads; or at pleasure it may be rang with twelve *singles*, which are likewise all made behind.

21354	41533	31542	51243
23145	45123	35124	52134
32415	54213	53214	25314
34251	45231	52341	23541
43521	54321	25431	32451
45312	53412	52413	34215
54132	35142	25143	43125
51423	31524	21534	41352
15432	13542	12543	14325
14523	—	15234	—
	13524		14352 &c.

Topsy-turvy. 1 and 2.

21354	41532	31542	21453
23145	45123	35124	24135
32415	54213	53214	42315
34251	45231	35241	24351
43521	54321	53421	42531
45312	53412	35412	24513
54132	35142	53142	42153
51423	31524	51324	41235
15432	13542	15234	14325
14523	—	12543	—
	13524		14352 &c.

Jumping Doubles dodging before.

IN this peal every change is a jumping change (in which one bell leaps over two bells at once,) except when the Treble is either behind or before ; for then there is always a plain *double change* made, or else a *single* at the end of each sixty changes. Treble

12345	31254	54132	24513	53241	43521
21534	23145	45213	42351	35421	34215
52143	32514	54321	24531	53214	43152
25314	23451	45231	42315	35142	31425
52431	32541	54312	24153	51324	13254
25341	23415	45123	41231	15432	—
52413	32154	51432	14352	14523	13245
25134	21345	15243	13425	41352	Gr.
51243	12453	12534	31542	34125	
15324	14235	21453	53124	43512	
13542	41523	42135	35412	34251	

is a perfect Hunt ; the two foremost bells always dodg until the Treble hinder. When the Treble is hunting up , the jumping changes are all made by the bell in the Tenor's place, jumping into *third's* , except only that one when Treble goeth out of *second's* place into *third's* ; for then the bell in the *3d* place jumps into Trebles, where it dodgeth with the bell in the *2d* place till Treble hinder.

der. When Treble is hunting down every jumping change is made by the bell in the $3ds$ place jumping into Tenor's, except when it goeth out of *third's* place into *second's*, for then the bell in Treble's place jumps into $3ds$. And observe always, that when Treble is going to lead the first time, the bell in Tenor's place jumps into *third's*, and the next time the bell in the *third's* place into Tenor's throughout the peal. There are two *singles* which are made, as in *Grandfire*.

Jumping Doubles dodging behind.

IN this peal Treble is a perfect Hunt, as in the former. The two hindmost bells always dodg till Treble hinders. When Treble is hunting up the bell in the *third's* place always jumps into Treble's, excepting only when Treble goeth out of *third's* place into *fourth's*; for then the bell in Tenor's place jumps into $3ds$. And observe, that every second time the Treble goeth out of $4th$ into $5ths$ place, the bell in Treble's place jumps into $3ds$; whereas at other times at the same change the bell in $3ds$ place jumps into Treble's. When Treble leaves the $5ths$ place hunting down, the bell in the $3ds$ place

jumps into Treble's ; when she leaves 4ths place the bell in 3^{ds} place jumps into Tenor's. When she is either in the 2^{ds} or 3^{ds} places hunting down, the bell in the Treble's place jumps into 3^{ds}. There are two *singles* made, as in the former Peal.

12345	31425	52143	24513	25341	34251
31254	43152	25314	45231	52431	23415
23145	34215	32541	54321	45213	32151
32514	42351	23451	35412	54132	21345
53241	24531	42315	53124	41523	13254
35421	52413	24153	31542	15432	—
43512	25134	41235	15324	14523	13245
34125	51243	12453	13542	51432	5c.
41352	12534	14235	51324	45123	
13425	15243	21453	35142	54312	
14352	21534	42135	53214	43521	

Symphonie, upon six bells.

I. 2. and 3.

IN this peal are 720 changes, all *doubles* except twelve *singles*, which are made as in plain *Trebles and Doubles* on six bells. The two hindmost bells always dodg till the *whole-hunt* hinders them, except when a *single* is made in the 4th and 5th places. When the *whole-hunt* leaves the 4ths place hunting up, the two foremost bells dodg till it leaves the same

same place again hunting down: but it may be rang at pleasure to make the bells dodg perpetually before as well as behind, by making in every twelve changes two Trebles, one of them when the *whole-hunt* leaveth the 3^{ds} place hunting up, and the other when it leaveth the 4ths place hunting down; so that there will be in the whole peal Sixscore Treble-changes. When the *whole-hunt* is behind, the four fore-most bells dodg; when the *whole-hunt* is before, the four hindmost dodg.

213465	1316254	615342	514623	412536
231456	361245	651324	541632	421563
234165	362154	653142	546123	425136
324615	632514	563412	456213	245316
234651	362541	653421	546231	425361
326451	635241	564321	453631	243561
236415	365214	654312	542613	423516
326145	635124	564132	452163	243156
321654	631542	561423	451236	241365
312645	613524	516432	415263	214356
132654	163542	156423	145236	124365
136245	165324	154632	142563	124635
				Sc.

Grandsire upon Symphonie.

I. 2. and 6.

This peal of Symphonie may be rang with but two single or two treble changes

at the end of either *Eighteenscore*, by ringing it with single and double bobs, as in *Grandsire Bob*. The rule for calling the bobs in this peal is the very same as in *Grandsire Bob*, but when the bob-changes are to be made, the Hunts do not lie in the same order as in *Grandsire Bob*; for in this peal at a single bob the *whole-hunt* leads, the *half-hunt* is in the 5th place, and the *quarter-hunt* in the 4th place. And at the first bob of a double bob the *half-hunt* is in Tenor's place, and *quarter-hunt* in 2ds place; and at the later bob the

213465	316254	316542	316425	612354
231456	361245	361524	361452	621345
324165	632154	635142	634125	263154
234615	362514	365412	364215	623514
924651	632541	635421	634251	263541
236451	365241	364521	362451	625341
326415	635214	634512	632415	265314
236145	365124	364152	362145	625134
321654	631542	631425	631254	261543
312645	613524	613452	613245	216534
132654	163542	163425	163254	126543
136245	136524	136452	162345	125634 &c.

half-hunt is in the 5th place, and *quarter-hunt* in 2ds place, just contrary to what it is in *Grandsire Bob*. I have prickt this peal with two Treble changes in every twelve; so that if you make two Trebles more at the end of either *Eighteenscore* (which must be made when

when the *whole-hunt* is going to lead just two changes sooner than if you should have made a *single*) there will then be in the whole 720 just Sixscore and two *Treble changes*.

Trebles and Doubles on six Bells with six Singles. 1. 2. and 3.

This peal is taken out of the *Dream upon five bells*. Every time the *whole-hunt* is before, there being two changes of that peal made in this. Every bell is a perfect

214365	321456	153462	164352
241635	234165	135426	—
426153	243615	153246	146532
462513	426351	152364	145623
645231	462531	125634	—
654321	645213	126543	154263
563412	654123	—	152436
536142	561432	—	—
351624	516342	162453	125346
315264	153624	164235	125364 sing.
132546	bob.	—	Sc.
135264	135642	146325	
312546	—	bob	

Hunt, when the *whole-hunt* is before dodg on the four hindmost, except the *half-hunt* be either in the 5th or Tenor's place, then always *bob* as in *Grandsire Bob*, except the quar-

quarter-hunt lieth next to the half-hunt, for then it is always to be a dodg on the four hindmost. Every other time that the whole-hunt and half-hunt come together before, there is a *single*, which is always made behind.

*A Twelvescore Trebles and Doubles.
upon Six Bells.*

IN this peal the four foremost bells go a four and twenty *Doubles* and *Singles*, observing

214365	234165	261453	156423
241356	324156	216435	165243
423165	231465	124653	— —
243156	213456	214635	615234
421365	124365	126453	165324
412356	142635	162435	— —
143265	416253	614253	163542
142356	461235	612435	136452
413265	642153	164253	— —
431256	641235	146235	316425
342165	462153	412653	136245
432156	426135	142563	— —
341265	241653	145236	132654
314256	421635	154326	123564
132465	246153	— —	— —
134256	264135	514362	213546
312465	621453	154632	123456
321456	624135	— —	— —

always, That for one Four and Twenty the bell

bell in the Treble's place is the hunting bell, and for the next the bell in the *4th* place throughout the peal, the two hindmost bells always dodging till the end of the Twenty Four; at which time there is a *double* made (if the bell in the Treble's place was the Hunt in the Twenty Four) on the four middlemost; but if the bell in the *4th* place was the hunting bell, the double is to be made in Treble and *2d* and *4th* and *5th* places.

Cambridg Bob.

THE Treble hath a constant dodging course; and when it leaves the two hind bells, they dodg until it comes there again, except when the Treble dodgeth before, and then they lie still. The two middle bells always dodg until the Treble comes there. When the Treble leaves dodging before, every bell leads *twice*, except when the Treble lieth still behind, and then the two first bells make a dodg. *Bobs* are made as in *Grandsire Bob*, and the warning for them the same also with that.

123456	325416
214365	352146
123465	531264
214356	532146
241365	351264
423156	315246
421365	132564
243156	315264
234516	132546
325461	135264
324516	312546
235461	135246
324561	312564
235416	321546
234561	5c.

Fourteen more Peals, composed at CAMBRIDG.

Doubles and Singles on five Bells.

The Parasite. 1 and 5.

In this peal the Bells behind always dodg, except the Treble prevents them. When Treble is leaving the 3ds place hunting up, the bells before dodg at whole pulls, if Tenor be not one of them, until it parts them. The course of the bells in hunting is the same with *Tendring*.

12345	35241	31524	42531
21354	35214	31542	42513
21345	53124	35124	24153
23154	53142	35142	24135
23145	51324	53412	21453
32415	51342	53421	21435
32451	15324	54312	2453
23415	15342	54321	12435
23451	13524	45231	14253
32541	13542	45213	14235
32514			5c.

The Tulip. I and 2.

IN this peal Treble hunteth as in *Tendring*. When Treble is in *third's* place hunting up, the bells dodg before at whole-pulls, till it comes and parts them. When it is in *third's* place hunting down the bells behind always dodg, except it leadeth, till it parts them. When Treble is before there are four changes of twenty four *doubles* and *singles*; whereof the first is brought in by the hunting of the bells. All the *singles* in the Twenty four are made in the *3d* and *4ths* place, except *1-2* before, then *extream* behind.

21354	51423
21345	51432
23154	54123
23145	54132
32415	45312
32451	45321
23415	54312
23451	54321
32541	45231
32514	45213
23541	54231
23514	54213
32154	45123
32145	45132
31254	41523
31245	41532
13254	14523
13524	14253
15342	12435
15432	12453
	Sc.

The Honey-suckle. I and 2.

IN this peal every bell leads four times. While every bell but Treble is leading, the bells

bells behind always dodg : every 4th change is made by the four foremost bells. When Treble is leading there are four changes of Twenty four *doubles* and *singles* made as in the the former peal. The first change is on the four bells before.

2 1 4 3 5	5 3 4 2 1	5 1 3 4 2	2 4 3 5 1
2 1 4 5 3	5 3 4 1 2	5 1 3 2 4	2 4 3 1 5
2 4 1 3 5	3 5 1 4 2	5 3 1 4 2	4 2 1 3 5
2 4 1 5 3	3 5 1 2 4	5 3 1 2 4	4 2 1 5 3
4 2 5 1 3	3 1 5 4 2	3 5 2 1 4	4 1 2 3 5
4 2 5 3 1	3 1 5 2 4	3 5 2 4 1	4 1 2 5 3
4 5 2 1 3	1 3 2 5 4	3 2 5 1 4	1 4 5 2 3
4 5 2 3 1	1 3 5 2 4	3 2 5 4 1	1 4 2 5 3
5 4 3 2 1	1 5 3 4 2	2 3 4 5 1	1 2 4 3 5
5 4 3 1 2	1 5 4 3 2	2 3 4 1 5	1 2 4 5 3 &c.

Peals on 5 bells, with twelve Singles.

Blunderbus. I--2.

IN this peal every bell is a Hunt. When Treble and 2d are together either before or behind, the farthest bells from them dodg till either of them part, excepting the *extremes*. When the Treble is before a *single* in 3d and 4th place, which is unmade the next time except 1—2; for then the Hunts being

being together before, the bells behind must dodg according to the rule forementioned.

21354	14325	13452	51234	23154
23145	41235	13542	15324	21345
32415	42153	31452	15234	12354
34251	24513	34125	51324	12534
43521	25431	43215	53142	—
34512	52341	42351	35412	21543
43152	53214	24531	53421	25134
41325	35124	25413	35241	Ge.
14235	31542	42143	32514	

Hudibras. I and 2.

IN this peal every bell is a Hunt. When Treble is before a *single* always in 3d and 4th place which is unmade the next time, except it be 1—2, for then the bells behind dodg until Treble parts them.

21354	15423	14532	31245	25143
23145	51243	14352	13425	21534
32415	52134	41532	63245	12354
34251	25314	45123	31425	12534
43521	23541	54213	34152	—
45312	32451	52431	43512	21543
54132	34215	25341	45321	25134
51423	43125	23514	54231	Ge.
15243	41352	32154	52413	

Weston Doubles. 1 and 5.

IN this peal Treble is a perfect Hunt. Every other time Treble is leaving the 3d place hunting up, the bells before dodg till it comes and parts them: the bells behind dodg but when Treble hinders them, except the *extrems* which are in 3d and 4th place when it is 1—2 before; all the other *singles* are made behind when Treble is leading. It may be rang by making all the *singles* behind, by making the change before it is 1—2 on the bells before.

12345	13254	51432	45123	32514
21354	13245	15423	41532	23454
23145	31254	15432	14523	21345
32415	32145	51423	14532	12354
23451	23415	54132	41523	—
32541	24351	45312	45132	12534
23514	42531	54321	54312	8c.
32154	45213	45231	53421	
31245	54123	54213	35241	

Peals on five bells with 10 Singles.

The Antelope.

IN this peal the bells hunt as in *Grandsire*. When Treble is before, a *single* is always made

made by the Tenor, and the bell which followeth it, except two *doubles* which are made as the *singles* in *Gransire*. It may be rang like *Cambridge delight* either way by observing the same method if like *Cambridge delight* the common way; and by making the *singles* by the *half-hunt* and the bell before it, if like *Cambridge delight* the other way.

21354	15243	34152	24531	53214	41253
23145	12543	31425	25413	52341	—
32415	21534	13452	53143	25431	15432
34251	25143	13425	51234	24513	14532
43521	52413	31452	15324	42153	—
45312	54131	34125	13524	41235	12354
54132	45321	43215	31542	14253	<i>Exir.</i>
51423	43512	42351	35124	14235	13245

The Maremaid.

In this peal behind dodg twelve 13254 12435 changes, excepting the sixth 31245 21345 which is made on the bells before, 32154 12354 and the twelfth which is a *single* 21354 12543 in the 3d and 4sbs places; and 12534 15234 twelve changes before, except- 15243 51243 ing also the sixth, which is made 51234 15423 by the bells behind, and the 52143 51432 twelfth which is a *single* in 2d and 21543 51324 3d places. When they dodg 21453 53124 behind, every odd change is on 2 *Sc.*

Q

the

the last bells, and every even one a *bob*, excepting these two changes. When they *dodg* before, every odd change is a *bob*, and every even one on the four first bells, excepting likewise those two changes which are made according to the forementioned rule.

The Checkquer. I and 5.

IN this peal the Treble is *whole-hunt*, and Tenor the *half-hunt* for twenty changes; and then Tenor the *whole-hunt* and treble the *half-hunt* for the next twenty, and so they hunt by turns throughout the peal. When Treble is the *whole-hunt* the bells behind always *dodg*, except it *hinders* them; and when Tenor is the *whole-hunt*, the bells before, except that *hinders* them; when Treble is before and Tenor *dodging* behind, a *single* made by the Tenor and the bell which *dodged* with it; when Tenor is behind and Treble *dodging* before, a *single* made by the Treble and the bell which *dodgeth* with that.

21354	31254
23145	13524
32415	15342
34251	51431
43521	54123
45312	45213
54132	42331
51423	24351
15432	42315
14523	24133
41532	42153
45123	24513
54213	25431
52431	52341
25341	53214
23514	35124
32154	31542
31245	13452
13254	31425
13245	13423

Or.

This peal may be rang by hunting the Treble and Tenor as before, and it differeth from it only in this; when it is 1-5 behind in the hunting of the Treble, the bells before dodg till Tenor parts them; and when it is 1-5 before, in the hunting of the Tenor the bells behind dodg till Treble parts them: and then when Treble is the whole-hunt and Tenor half, it is plain *Cambridg Delight* inverted. It may be rang by hunting the half-hunt, as in *Cambridg Delight* the other way, in either of those ways of ringing it, but then the single is always made by the hunting bell.

21354	12543
23145	21453
32415	24135
34251	42315
43521	43251
45312	34521
54132	35412
51423	53142
15432	35124
14523	53214
41532	35241
45123	53421
54213	54312
52431	45132
25341	41523
52314	44332
25134	15423
21543	51243
12534	15234
21534	15243

Sc.

An example in that like *Cambridg Delight* another way.

Q. 2

Gog-

Gogmagog. I. 5.

IN this peal the bells hunt as in *Grandsire*, and it differeth from it in this, That there is not every other time a single *bob*, but in stead of a single one every other time a double one: so that only once in four times there is a single *bob*; when Tenor is dodging behind there is always a *single* made by it, and the bell which dodgeth with it if Treble leadeth, otherwise not.

2135434512	12543
2314543152	21534
3241541325	25143
3425114352	52413
43521	54231
4531214325	45321
5413241352	43512
5142343125	34153
1524334215	31425
1253432451	13453
2154323541	—
2513425314	13425
5231452134	31452
5324151243	34125
3542115234	3c.

I - 4.

THIS peal may be rung like *Cambridge Delight*, if every other time the dodging before be omitted; or it may be rang by dodging constantly as in *Cambridge Delight*, by making double *bobs* and single *bobs* as in *Grandsire*: it may likewise be rang by making the course of the *half-hunt* in all the ways

ways of ringing it the same with *Cambridge Delight* the other way; observing in all of them to make the *singles* as before directed.

An example of that like *Cambridge Delight* the other way, in which the dodging before is every other time omitted. I - 4.

21354	14523	12534	34152	25314
23145	41532	—	31425	52134
32415	45123	12543	13452	51243
34251	54213	21534	14325	15234
43521	52431	25143	41352	—
45312	25341	52413	43125	15243
54132	52314	54231	34215	51234
51423	25134	45321	32451	52143
15432	21543	43521	23541	—

Cambridg Marigold. I. 2. and 3.

IN this peal are 720 214356 312564 165432 changes, which are 241536 321654 164523 all *doubles* except 12 425136 236154 — *singles* which are made 452316 263514 146253 as in Plain *trebles* and 542361 623541 — *doubles*. *Treble* is a 543216 625314 124365 perfect *Hunt*, and except the *dodges* (which 534126 652134 124635 are the same as in *Oxford double Bob*) every 351426 561234 — *double change* is made by the *treble* and the

three next bells to it: observing always that the bell in *Tenor's* place lieth still till it giveth place to the *Treble*, or be removed by a *dodg* behind when the *Treble* is before. When *Treble* leaveth *3ds* place hunting up, the bell that then comes before, leads thrice, and likewise the next bell after it till *Treble* cometh back into *3ds* place again; at all other times every bell leads twice. The bell in *Tenor's* place lieth five times behind, (and when the *single* is made in the middle ten times) till *Treble* removeth it; and when *Treble* comes back it lieth five times more behind, and then is displaced by a *dodg* behind and hunts down at whole-pulls. This peal may be rang by making *bobs* single and double as in *Grandsire Bob* with but two *singles* or two *trebles*, which must be made just Eighteen score changes one from the other.

The Nightingall. 1. 2. and 3.

IN this peal are 720 changes, which are all *doubles* except twelve *singles*, which are made as in the former peal; and if you ring *Grandsire Bob* upon it, there may be but two *singles*, or else two *trebles*, as in the *Mari-gold*. *Treble* is a perfect Hunt: the bells in 4th and

and 5th places dodg till *treble* parts them, and then the two foremost bells do the like for eight changes together till *treble* hinders them, and gives way to the other two bells to dodg again in the 4th and 5th places, which is always for three changes and no more, except when the *single* is made in that place, and then they dodg six times. When *treble* is behind, dodg the four first; when it is before on the four last, as in *Mari-gold*.

1	2	3	4	5	6	3	5	6	2	4	1
2	1	3	5	6	3	5	6	1	2	4	1
2	3	1	4	5	6	3	5	6	1	2	4
3	2	4	1	5	6	3	5	1	6	2	4
3	2	4	5	1	6	3	1	3	2	6	4
3	2	4	5	6	1	5	3	6	2	4	1
3	2	5	4	6	1	5	6	3	4	2	1
3	2	5	1	4	6	1	6	5	4	3	2
3	2	5	1	4	6	1	6	4	5	2	3
3	1	2	4	5	6	3	1	2	4	5	6
3	1	2	5	4	6	3	1	4	6	2	5
1	3	2	5	4	6	1	4	6	2	5	3
1	3	5	2	6	4	1	4	2	6	3	5
1	3	5	6	4	2	1	2	4	3	6	5
1	3	5	6	2	4	1	6	4	5	2	3
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